The Harveian Oration.

Delivered before the Royal College of Physicians of London on June 21st, 1905,

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MR. PRESIDENT, FELLOWS OF THE COLLEGE, AND VISITORS,—Your predecessor, sir, in the presidential chair of this College did me the honour, which I highly appreciate and gratefully acknowledge, of inviting and nominating me to deliver the Harveian Oration for the present year. Had I followed my natural inclination to keep in retirement, especially on such a prominent occasion as this must necessarily be, I should have declined the invitation, being but too conscious of my unfitness for the position, my incapacity for fulfilling adequately the important function which it involves, and my inability to do anything like justice to the great and immortal personality whom we commemorate to-day. I have, however, always been guided by the principle to do what I am asked by those in authority, and therefore in a rash and thoughtless moment I consented, without duly considering or realising the responsibilities or difficulties of the task I was undertaking. Notwithstanding my misgivings and shortcomings, however, I venture to comfort myself with the assurance, remembering our long and intimate friendship, that you, sir, will be ready to acquiesce in my selection and at the same time to extend to me your kindly sympathy and encouragement in the trying position in which I am placed. And as this is the first occasion on which you make what I may call a public appearance in this College as President I trust it may not be considered out of place if for myself and on behalf of the Fellows generally, I offer you our cordial congratulations on attaining to such an eminent and distinguished position, which you have so well and honourably earned by following in Harvey's footsteps and which I feel confident you will most worthily adorn.

I need scarcely remind you that in accordance with Harvey's express direction the oration was, until within a comparatively modern period, composed and delivered in Latin. It is just 40 years ago since the change was made to our native English tongue and it may be interesting to recall the fact that on the first occasion when this change was adopted—namely, in 1865—the orator was Dr. (afterwards Sir) Henry Acland, whose eminent position and excellent work at Oxford are familiar to all, and the President was Dr. Thomas Watson, soon afterwards created a baronet, whose classical and finished writings earned for him the title of the "Cicero of English medicine," who was above all others revered and beloved by his contemporaries and has been fitly styled "the greatest physician of his time" and who will ever stand out and be remembered as one of the most distinguished, learned, and high-principled members of the medical profession in this or any other age or country. The change to which I have just referred seems, with one or two exceptions, to have met with general approval and acceptance by the Harveian orators since that time, many of whom were classical scholars of high repute and fully competent to address such a distinguished audience as this in choicest Latin. Personally, for reasons which I need not specify, I certainly do not feel inclined to make any protest against the present practice. At the same time I take this opportunity of expressing my opinion that it would be a great mistake to do away with classical instruction as an essential part of the early training and general culture required for the medical profession which seems to be the present tendency in certain quarters.

Before entering upon the task of preparing what, in my case, can only be euphemistically described as an "oration," I naturally endeavoured to derive some guidance and inspiration from the perusal of the thoughts and utterances of the eminent and distinguished Fellows who have in succession occupied my present position during this intervening period of 40 years. My first impression was certainly not one of encouragement, for I at once fully realised that I could not venture to approach even within measurable distance the high standard which most of them reached, either as regards the instructive and interesting character of their themes, or the scholarly, polished, and often truly eloquent language in which they were expressed. Moreover, my difficulties were not diminished when I found that almost every possible subject which could be dragged in relating to Harvey had been dealt with again and again and it seemed hopeless to attempt to strike out any new line, or to indulge in vain repetition without weakening and spoiling what had already been so well said. One encouraging suggestion, however, I gained from my perusal—namely, that not a few of the orators by no means adhered strictly to Harvey's injunctions in the selection of the subject matter of their discourse, or at least gave them a very wide interpretation, while in several instances particular subjects were discussed which happened to be prominent at the time, or in which the individual was personally specially interested.

To-day we commemorate the "immortal Harvey" for many reasons and from different aspects. Many of the previous orations have been devoted mainly or entirely to the study of Harvey himself, either personally or in his various relationships; or to a consideration of his work from different points of view. To me it appears that this is not in strict accordance with his intention or desire; and therefore I do not propose to address you on these lines, though by way of introduction I think it desirable to allude briefly to his work and to the main events of his career, even though they be quite familiar to all present.

As regards the work which Harvey accomplished, his fame must always be pre-eminently associated with his great discovery of what is commonly spoken of as the "Circulation of the Blood," though his published treatise is really on the "Movements of the Heart and of the Blood." His activity as an observer and investigator ranged, however, over a far wider field than this, but it will suffice to mention his work on "Generation," which was the outcome of patient and extensive observations and experiments and of conspicuous originality and interest, while it is well known that he put together materials under the heading, "Medical Observations and Pathology," no doubt of great practical value, but which unfortunately were either destroyed or dispersed by the fury of a revolutionary mob or consumed in the Fire of London. Assuming that I may speak on your behalf, I once more affirm that we implicitly and unhesitatingly believe in the absolute priority of Harvey's claim to the discovery of the circulation of the blood, a claim which has been amply and eloquently demonstrated and vindicated in this place by previous Harveian orators as well as by others elsewhere in speech or writing who have a right to speak with unimpeachable authority. Its magnitude and far-reaching effects have been described in various and glowing terms. Thus, it has been spoken of as "the most momentous event in the history of medicine since the time of Galen"; as the "foundation stone of scientific medicine"; as "a new power which afforded a point of new departure, becoming the central idea dominating and enshrined by medical knowledge for all time"; and as "inaugurating the era of rational medicine and reconstituting the face of physiology." To us of more mature years who can look back upon and realise in some degree the stupendous progress which has been made since Harvey's time in physiology, pathology, and scientific and practical medicine and surgery, these expressions appear in no way exaggerated, for they but declare the absolute and solemn truth. I wonder whether the modern medical student to whom the "circulation of the blood" is one of the most elementary and familiar facts impressed upon his youthful and receptive brain almost at the outset of his career, ever gives a thought to the discoverer or to the grandeur of his discovery, or has the faintest notion of where we should have been as a profession had it not been for this stupendous epoch in the history and progress of scientific investigation and knowledge? Nor must we forget the formidable difficulties under which Harvey carried out his investigations and established on a sure foundation the great revelation which no doubt had impressed itself on his active and eager brain; the profound errors, supported by long tradition and by the highest authorities, past and present, which he had to combat and to overthrow, and the confusion he had to clear away; the intelligence and indomitable perseverance with which he worked out and proved to demonstration the positive facts which he had to present in their stead; and the masterly and yet courteous manner in which he disputed and ultimately overcame the objections

which from various powerful quarters had been raised against his views.

To Folkestone belongs the indisputable honour of having been the birthplace of Harvey in April, 1578, according to Willis on the first day of that month. Though somewhat late, the town acknowledged the honour by erecting a tercentenary memorial statue in bronze of its illustrious townsman, which was unveiled in August, 1881, by Professor Richard Owen, in the presence of representatives of the medical profession from all parts of the globe. Harvey was the eldest of a large family, and, like most great men, he had a noble-minded woman for his mother, as recorded in the beautiful inscription on her monumental tablet in Folkestone Church, where she is spoken of as a "godly harmless woman," "a careful, tender-hearted mother," and "reverenced of her children." I mention her more particularly as this year is the tercentenary of her death, which happened on Nov. 8th, 1605, in the fiftieth year of her age. No doubt she guided and encouraged her son during his early life and under her supervision he is supposed to have acquired the rudiments of English education. Harvey belonged to a well-to-do, prosperous, and happily united family and appears always to have had no lack of means to pursue any course which he might select. For probably a limited period he must have had a lucrative practice, during which he appears to have accumulated a fair amount of capital which was employed by his brother Eliab to such purpose that the doctor actually died a rich man. Harvey married in 1604 the daughter of Dr. Lancelot Browne, who had been physician to Queen Elizabeth, but he had no family to embarrass him in his work. He began his studies at an early period of life and, no doubt, soon became an ardent and devoted worker. He entered the grammar school of Canterbury when ten years old and in May, 1593, having just entered upon his sixteenth year, became a pensioner at Caius-Gonville College at Cambridge. In 1597, when 19 years of age, he took his degree of B.A. of the University of Cambridge. Harvey then proceeded to Padua to prepare himself for the profession of medicine, where under Fabricius and other able masters "he drank in the elementary knowledge which served him as a foundation for that induction which has made his name immortal" (Willis). In April, 1602, when in the twenty-fourth year of his age, he obtained his diploma as Doctor of Physic of that University, with "licence to practise and to teach arts and medicine in every land and seat of learning." Harvey then returned to England and received his Doctor's degree from the University of Cambridge in 1603. He settled in London in 1604 and entered on the practice of his profession.

Harvey's connexion with this College demands more than a passing notice. In 1604 his name appears on the roll of candidates for the Fellowship and in 1607, after having passed through his term of probation, he was duly admitted a Fellow. In 1615, when 36 years old, Harvey was appointed Lumleian lecturer, to deliver the lectures on anatomy and physiology, a position which he held until 1656. In the very first course he presented a detailed exposition of his views concerning the circulation of the blood, which continued to form one of the subjects of his lectures for nine or ten years before he published his celebrated treatise in 1628 and he had gone on demonstrating the subject before his learned oratory, illustrating it by new and additional arguments and freeing it from the objections raised by the skilful amongst anatomists. Harvey held the office of Treasurer for one year, from 1628 to 1629. He served three times as Censor. In 1652 this College placed his statue, with a complimentary inscription on the pedestal, in its hall at Amen Corner, which, unfortunately, was destroyed by the Great Fire of London. About this time Harvey commenced the erection at his own cost of a handsome addition to the College of Physicians and also furnished the library with books and the museum with numerous objects of curiosity and a variety of surgical instruments. The ceremony of opening took place on Feb. 2nd, 1653, and on the occasion Harvey provided a sumptuous entertainment at his own expense, at which he received the President and Fellows and made over to them on the spot his whole interest in the structure. In the next year he was unanimously elected President in his absence. He attended the Comitia of the College next day, but in graceful terms declined the honour, regarding the concerns of the College, which had greatly prospered under the preceding President, Dr. Prujean, as being too weighty to be intrusted to one like him laden with years and infirm in health, and in compliance with his recommendation Dr. Prujean was re-elected. Harvey accepted, however, the office of *consiliarius*, which he again held in the two following years. In July, 1656, Harvey delivered to the College a formal deed, by which he bestowed upon it as a free gift his paternal estate at Burmarsh in Kent, worth at that time £56 per annum, with special provision settling one sum by way of salary for the librarian and another sum for the delivery of a solemn oration annually. The College of Physicians was justly proud of Harvey and he was undoubtedly greatly attached to the College, which he regarded as a grand foundation, and where he consorted with his nearest and dearest friends, seeking to bind in close friendship those who met in solemn conclave to determine the great questions of the day, while he received from all those marks of respectful consideration which were so justly his due. Moreover, he did not forget the College in his will, providing money "to be raised and laid out upon that building which I have already begun to erect within the College of Physicians in London as will serve to finish the same according to the designs already made." He further bequeathed all his books and papers and certain articles for the ornament of the meeting room he had erected for that purpose.

On Oct. 14th, 1609, Harvey was formally elected physician to St. Bartholomew's Hospital when in his thirty-second year. For this and other reasons I venture to express our cordial wishes and hopes that the special appeal for funds which is now being made on behalf of this ancient institution and great hospital may receive generous support. With regard to Harvey's connexion with the Court, which began in 1618, he having been in succession physician to James I. and Charles I., I will only offer the following remarks. No doubt at first this connexion was to his advantage but owing to the interruptions by travel and the well-known events associated with the Civil War his ordinary professional pursuits and avocations must have been seriously interrupted. From the year 1633 he appears to have devoted much of his time to Charles and the retainers of the Court and from 1636 to have been personally attached to the King in his various expeditions. He is said, however, to have kept himself aloof from all the intrigues and dealings of the party with which he was connected and to have held himself exclusively to the discharge of his professional duties. Whatever the faults of his sovereign may have been the feelings between him and Harvey seem to have been those of mutual love and respect; while, as is well known, Charles, as well as the Queen and Court, took a deep personal interest in his investigations and dissections. The incident of the young nobleman, who owing to a fracture of the ribs on the left side had a large opening there, through which the heart protruded, and who was demonstrated by Harvey to the King, must always be remembered as an interesting event from more than one point of view. He took him "so that His Majesty might with his own eyes behold this wonderful case," this "man alive and well" in whom he might "without detriment to the individual, observe the movement of the heart and with his proper hand even touch the ventricles as they contracted." Having done so, Harvey says "His most excellent Majesty, as well as myself, acknowledged that the heart was without the sense of touch, for the youth never knew when we touched his heart except by the sight or the sensation he had through the external integument." We can well imagine what delight this demonstration would have afforded to Harvey.

Harvey went with the King and Court to Oxford, where he was everywhere handsomely received and entertained, and not only was the honorary degree of Doctor of Physic conferred upon him but in 1645 he was elected Warden of Merton College, resigning his charge, however, in the following year owing to well-known historical events and returning to London. He then, being 68 years old, retired from active life, resigned his appointments, and relinquished the cares of practice, spending his later days with one or other of his brothers in learned retirement but not in indolence. Harvey was fond of travelling and is said to have travelled to Italy at the advanced age of 71 but this is doubtful. In 1651, however, when he was 73 years old, his work on "Generation" was published, as the result of the stimulating influence and persuasion of Ent. Although long afflicted with gout Harvey appears to have maintained his activity of mind and the integrity of his intellectual faculties to a late period of his life, if not to the last. He died in his eightieth year in June, 1657, and was buried with great honour in his brother Eliab's vault in the parish

church of Hempstead in Essex. On Oct. 18th, 1883, by the piety of this College, his remains were removed from the dilapidated vault and with befitting solemnity were re-interred in the marble sarcophagus in the Harvey Chapel attached to the same church, eight Fellows bearing his body "lapped in lead" to his final resting place.

In the deed by which Harvey conveyed to the College his estate he laid down what may be regarded as three distinct and definite instructions or injunctions with respect to the subject matter of this oration and I regard it as my duty to follow these injunctions in the main as texts upon which to base the remarks I propose to submit for your consideration. The first injunction is that "there shall be a commemoration of all the benefactors of the said College by name and what in particular they have done for the benefit of the said College, with an exhortation to others to imitate these benefactors and to contribute their endeavours for the advancement of the society according to the example of those benefactors." During Harvey's life and long after this portion of the oration need not have occupied much time, but to-day it is a very different matter and it is obviously impossible to deal with it within the limited time at my disposal in anything like an adequate manner. I may note in the first place that the College is in possession of a large number of gifts of various kinds from many donors, past and present, in the way of portraits, including that of Harvey himself, busts, articles of furniture, and miscellaneous objects which are open to all who may be disposed to inspect them. Of these gifts I will only specially mention those now before you—namely, the silver caduceus, the emblem of the President's office, and carried by each one, given by Dr. John Caius; the handsome mace borne before the President, presented by Dr. John Lawson in 1694; and this bust of Harvey, for which we are indebted to Dr. Richard Mead. When we come to consider the large number of benefactors to whom this College has been under obligation in the past it is obviously out of the question to mention them individually, and I must generalise more or less, though a few of the most prominent amongst them can never be ignored on this anniversary.

First and foremost as a matter of course comes Harvey himself, who to-day we place on a pinnacle above all others, not only for the actual and tangible benefits which he has conferred upon us but also for the greatness of his work and immortal discovery, his noble character and personal qualities, and the lasting and inextinguishable glory and distinction which he has reflected upon this College. Then we can never forget Thomas Linacre, the practical founder of the College of Physicians, which was inaugurated by charter in 1518, and who became its first President. He has been well styled by our learned librarian "the intellectual grandfather of Harvey." The College meetings were held in his private house which he made over to the physicians and it was subsequently enlarged and used until 1614. He also laid the foundation of our library. The name of John Caius also stands out during the latter half of the sixteenth century as one of the most noteworthy men our profession has ever produced. He re-founded Gonville Hall at Cambridge and was the first to introduce and to teach practical anatomy in England. Dr. J. F. Payne has suggested that Harvey's lines of thought and study were probably much projected under the posthumous influence of the second founder of his College at Cambridge. He was President of this College from 1555 to 1561 and again in 1562 and 1571. The College is further indebted to him for first instituting its annals and for a revision of its statutes. He was, in fact, our first Registrar and set an example to all succeeding Registrars which is certainly most faithfully and ably maintained at the present time.

Amongst the benefactors of this College whom we should undoubtedly honour on this occasion are those who have held high office and to whom we are indebted in such large measure for the position it holds to-day, its practical working, and its continued prosperity and usefulness. Naturally our Presidents claim special recognition. The office of President of the Royal College of Physicians of London is not only one of great influence and high dignity, but at the present day, at any rate, entails serious responsibility and no small amount of anxious thought and labour. On looking down the list of those who occupied this position during the sixteenth, seventeenth, and eighteenth centuries, while all, no doubt, were men of learning, culture, and high character, there are some well-known names which arrest our attention as belonging to those who contributed conspicuously to the progress of science or medicine in their time or as having been of special service to this College. In the nineteenth century the presidential chair was occupied by some of the most eminent physicians of their day, and many here present will remember with deepest respect and affection personal friends or acquaintances who most ably filled that position during the latter half of the century. I feel sure it would not be your wish that I should close this reference to the past Presidents of this College without expressing our cordial appreciation of, and deep gratitude for, the devoted and most efficient manner in which our latest out-going President, Sir William Selby Church, has fulfilled the duties of his office during the six years which he has held it, and the thoroughness, dignity, and tact with which he has grappled with the numerous difficult and complex questions with which he has had to deal. Nor can I omit to call to your remembrance to-day a venerable figure whose prolonged and devoted services to this College can never be forgotten and who, if he lives until the 1st of July next, will have reached the great age of 97. I allude, of course, to Sir Henry Pitman, our Emeritus Registrar, the oldest Fellow of this College, having been elected in 1845, and one of its most honoured officers. He held the appointment of Registrar from 1858 to 1889 and during that period was rarely absent from a meeting of the College. In all matters of college reform and administration which came under consideration during his long term of office Sir Henry Pitman's views and advocacy were influential and contributed in no small degree to the settlement of many debatable points. For long after his retirement he took the keenest interest in all that related to the College and its welfare; and, as I am given to understand, still has a great affection for the old place and is quite ready to make his appearance at the Comitia and to give us the full benefit of his advice.

A group of benefactors who strongly appeal to our practical interest on this occasion and whom we gladly commemorate are those who, either themselves or through their influence upon others, or by subscribing together a substantial sum, have been the means of founding Lectureships at this College or who have given endowments for Prizes, Medals, or Scholarships, either to be awarded by this College alone or in association with other institutions. Although most of these benefactions have been brought under our notice by previous Harveian Orators within a recent period I have thought it worth while to prepare a complete and up-to-date summary of these lectureships and endowments which the College now possesses and to indicate briefly their origin, nature, and intention. It may be stated generally that their objects are to reward merit for scientific or clinical work already accomplished; to encourage medical education and training; and to stimulate investigation and research, either generally or in relation to particular subjects. While giving due honour to the donors we must not forget also to pay tribute to those distinguished men in whose memory some of these endowments were established, all of whom, with one exception, were Fellows or Members of this College who in their day occupied a high position in our profession and did excellent service in their several ways. This statement I feel sure you will readily endorse when I mention the names of Baly (whose memorial medal has this year been awarded to Professor Pawlow of St. Petersburg, a physiologist and pathologist of world-wide fame), Murchison, Moxon, and Parkes. The exception I have referred to is the great physiologist—William Sharpey, who was the revered and beloved professor of physiology at University College from 1836 to 1874 and who has been so generously and fitly commemorated by my old fellow student, and one of Sharpey's most distinguished pupils, Dr. George Oliver, who has himself done so much to advance our knowledge of the circulatory system. I propose to reserve further details on this part of my subject for the published oration, as I feel it would be entirely out of place to inflict them upon you on the present occasion.

For a similar reason I will only mention comprehensively the other benefactors whom we have to remember to-day—namely, those who have contributed to the library and museum, either in money or in kind, or to the general funds of the College, without reference to any specific object. I must not omit, however, to call attention to the recent bequest of the late Mrs. Begley, the widow of a former venerable Fellow of this College. The bequest is the more acceptable on account of the terms in which it is expressed. Mrs. Begley bequeathed to the Royal College of Physicians

certain specific articles free from duty "to show my admiration of the faculty and gratitude to some of its Members during my widowhood"; and by a codicil to her will further bequeathed a legacy of £500 free of duty, which I need scarcely say is most acceptable.

While thus duly recognising those who have benefited this College in a substantial manner we must not forget that we owe an immense debt of gratitude to many who have not been in a position to help it in a similar way but who by their professional or scientific attainments and achievements as well as by their high personal character and charm, general culture and scholarship, and intellectual and moral qualities have shed unfading renown and lustre upon the College of Physicians. Were I to begin to mention individuals coming under this category I should never know where to end, but the names of many past and present Fellows will readily rise in your memories whom we may fitly regard as among our truest benefactors.

Before concluding this part of my subject I must not omit to remind you as well as myself of Harvey's exhortation to imitate these benefactors and to follow their example. There was a time, and not so very long ago, when this College was anything but flourishing from a financial point of view, but our excellent Treasurer gave us recently to understand that our position is now fairly satisfactory. Nevertheless, I presume he would still endorse the appeal he made in his Harveian Oration in 1898 for endowments to enable us to maintain our position, our fabric, and our library, as well as for other purposes which aim at the promotion of research, the advancement of science and medicine, and the substantial recognition of those who by their labours and discoveries are worthy of being thus honoured. Therefore, may I suggest that the College is always ready to receive and to make good use of any gifts from those who are too richly endowed with this world's goods and are desirous of getting rid of their superfluous wealth. Some whom I am now addressing may be thus fortunately situated or they may be on intimate terms with and able to influence a Carnegie, a Donald Currie, or a South African millionaire in such a way as to make them divert at least a portion of their gifts in this direction. But if we can do nothing of this substantial nature we may each one of us, at least, endeavour by our work and character to approach in some measure the high standard set before us by our predecessors and thus fulfil, however imperfectly, Harvey's exhortation.

My next duty is to "exhort the Fellows and Members of this College to search and study out the secrets of nature by way of experiment." What Harvey meant by "experiment" can hardly be strictly defined, but I presume he would include under the term the methods which he himself so successfully employed, as well as any others which might in the progress of events be subsequently discovered or developed for the purpose. His methods were careful, thorough, and systematic observation; dissection of the human body; comparative dissection of a large number and of all kinds of animals, as well as during fœtal life; and unquestionably direct inspection of the heart and vessels in living animals, as well as actual experiments, or what we now speak of as "vivisection." It is hardly necessary for me to defend or to justify the practice of vivisection before this College, which has already been done in previous orations with great thoroughness and ability. On this question the College itself has spoken out with no uncertain sound, though not rashly or without due consideration. In confirmation of this statement I need only remind you of the way in which the question was dealt with last year, referred from the Home Office, as to the necessity for experiments on living anæsthetised animals in the teaching of pharmacology.

There can be no doubt that Harvey regarded the College of Physicians as "the great centre from which the light of medical science and skill was to shed its lustre over England; he hoped that the College was to be the teacher of her people, the adviser of her rulers, and the training-school of her medical men" (Barclay). It was a long time, however, before his hopeful anticipations were in any degree realised, and I have read a scathing rebuke in one of the former Harveian orations of the Fellows of the College and of their narrow and exclusive jealousy as being responsible for this result. Speaking generally, however, it may be stated that a prolonged interval elapsed after Harvey's time on account of well-known causes, during which little or nothing was done in the way of research and comparatively few of our Fellows contributed anything to the advance of medical knowledge. Let us be thankful to-day that this is ancient history and that the new scientific era completely altered the face of things and has led progressively to the marvellous developments of which we now reap the fruits.

So far as this College itself is concerned as a body its claim to aid modern scientific research chiefly rests on its association with the College of Surgeons in founding and working the laboratories at the Examination Hall, which were established early in 1890, but ceased to exist at the end of 1902, when the results of the practical experience gained there were handed over to the Metropolitan Asylums Board, while other parts of the building are now devoted to kindred work in the Army Medical School and for the work of the Imperial Cancer Research Fund. An interesting report has been published recently, for which we are indebted to our distinguished Fellow, Dr. P. H. Pye-Smith, in which a list is given of the investigations carried on in the laboratories during their existence, showing that much sound and important pathological and other work has been accomplished by the liberality of the Colleges which has had a most beneficial direct as well as indirect bearing on the prevention and cure of disease.

If Harvey could come on the scene at the present time and realise what is going on in the way of "seeking and studying out the secrets of nature by way of experiment" surely he would be amazed and amply satisfied to see the extent and thoroughness with which his exhortation is being carried into effect in all directions. On all sides the cry is for "research," usually accompanied with an appeal for "funds," and we see it carried out in relation to industrial enterprises, chemistry, physics, biology in all its branches, light, electricity, agriculture, and various other departments having no immediate bearing on our profession. Yet even in some of these departments new discoveries have been, and are being, made and new forces or elements brought to light, not a few of which have already proved of decided value in diagnosis and treatment and it is impossible to foretell or to estimate what the future may bring forth in this direction.

Coming to the question of research in relation to the medical profession more particularly the existing conditions and indications are decidedly favourable and promising. In the first place the trend of modern medical education and training is distinctly of a progressively more and more scientific character and aims at preparing the student so that he may be able in the future to carry on research with real advantage to himself and to others. The older universities have been roused into activity and revivified, being now in the van of progress in this direction. At all our newer universities and in the medical schools laboratories for scientific observations and investigations of different kinds, in relation to physiology, pathology in all its aspects, including pathological chemistry, bacteriology, pharmacology, and clinical investigation are in active work. The tendency to centralise the preliminary scientific studies for the medical profession in London in a few institutions is a move decidedly in the right direction. I trust, however, that in carrying out this object due regard will be paid to those institutions already possessing well-established and fully-equipped scientific departments, which have done excellent work in the past and are thoroughly "up-to-date." In most hospitals, also, clinical laboratories for research of different kinds are now in existence which are of great help in diagnosis and thus of decided advantage to the patients, while if properly utilised they afford excellent opportunities for the scientific training of the more advanced students in the methods and objects of research in this direction.

The establishment of independent laboratories for pathological work and research is another advance by which great results have already been achieved and from which we may anticipate incalculable benefits in the future. These institutions are now met with all over the world and I cannot avoid mentioning specially the Pasteur Institute in Paris where those of us who recently visited that city were so kindly received and took part in the interesting ceremony carried out on that occasion. It is certainly a wonderful place and a worthy memorial to the great yet simple-minded personality—Pasteur—whose name may fitly be ranked with that of Harvey. In this city we have also an institution associated with an equally honoured name which is revered and always received with acclamation in every part of the world—namely, the Lister Institute of Preventive Medicine, which has recently been admitted as a school of the University of London in the Faculty of Medicine for the purpose

of research in hygiene and pathology. In many of our chief provincial cities and towns similar developments are taking place, and, indeed, they give London an example of progress in this direction with which it is very difficult to keep up. And remembering the direct interests which this vast empire has in almost all parts of the world it is encouraging to note that institutes for research have been, or are being, established in our different colonies, in India, and in various tropical regions. And this brings me to another important and promising feature—namely, the application of scientific research for particular purposes and for the study of special subjects, among the most prominent of which may be mentioned tuberculosis, cancer, tropical diseases, nervous affections, psychology, sanitation and hygiene. Other aids and encouragements to research which I can now only enumerate without any comment are the presentation of "research scholarships" to deserving individuals by the British Medical Association, certain city corporations, and other bodies, as well as by private persons; the contribution of large donations by wealthy and sensible persons who are well disposed towards the medical profession and are beginning to realise their responsibilities to particular institutions or for particular purposes; and the fact that their Most Gracious Majesties King Edward and Queen Alexandra, as well as other members of the Royal Family, take such a warm and practical interest in research work and in its results in certain directions.

As immediately relevant to our commemoration of Harvey to-day it would be entirely within my province to discuss in historical sequence the progress that has been made with regard to the circulatory system since histime and to indicate the present state of knowledge and practice in relation to that system. To enter upon this subject, however, at any length is obviously out of the question within the time at my disposal, and I must content myself with a very general summary, leaving further discussion for the published oration. At the outset it is necessary to bear in mind what Harvey really did discover and demonstrate and thus to have some definite starting point for studying the results of further investigation and progress. Of course, many anatomical facts relating to the heart and vessels as well as that there was a movement of the blood were well known before Harvey appeared on the scene and these facts he fully appreciated and utilised, at the same time correcting anatomical errors and controverting the erroneous conclusions and theories of his predecessors. I take it for granted that this learned assembly is familiar with the details of the work and teaching of Harvey in establishing among other points the muscular structure and contractility of the heart, whether known previously or not, and in demonstrating its mode of action and mechanism and the effects thereby produced; at the same time proving that the blood moved in a constant stream and in a definite direction, there being a complete double circulation, pulmonary and general. He sums the matter up in the words: "By the impulse of the heart there is a perpetual movement of the blood in a circle." Though he had absolute proof that the blood did somehow find its way from the terminal arteries into the commencing veins he did not know how and conjectured that it was the result of percolation through the organs and tissues. With his simple magnifying lens or *perspicillum* he could not see the delicate network of capillaries, which were only observed when the microscope was sufficiently developed, by means of which the capillary circulation in the frog's lung and mesentery was first observed by Malpighi and the definite continuity of the circulation thus established. Nor did Harvey understand the meaning of the pulmonary circulation, knowing nothing about the mechanism or chemistry of respiration, which were only discovered at a much later period, and this constituted a most important advance. Although described in his time Harvey would not acknowledge the existence of a distinct absorbent system.

[Dr. Roberts then proceeded to summarise the methods by which knowledge and practice in relation to the circulatory system had been advanced since Harvey's time and especially those of more modern date. He insisted upon the essential value of post-mortem examinations in this connexion and of the systematic study and teaching of morbid anatomy, which no doubt Harvey thoroughly recognised, but which for a long period afterwards was entirely neglected, and also nowadays of morbid histology. He further pointed out how much had been achieved by intelligent clinical observation and investigation, and how far progress had been aided by the introduction of the stethoscope and by other instruments of special apparatus of various kinds for demonstrating or recording the movements of the blood, the arterial tension and blood pressure, and other phenomena connected with the circulation. The chief methods of examining the blood were briefly referred to.

As illustrating the advances made in our knowledge in relation to the nature, etiology, and pathology of morbid conditions of the circulatory system, the orator referred to gross organic lesions of the heart and vessels, the different forms of acute endocarditis, acute and chronic changes affecting the myocardium, functional disorders and their relation to the nervous system, thrombosis and embolism, the mutual pathological effects produced between the cardio-vascular and other systems, the principal changes and diseases associated with the blood, and certain special morbid processes or lesions with which the circulatory system is concerned. Dealing with clinical investigation in relation to the heart and vessels, while fully recognising the value of the various instruments and apparatus already referred to, he insisted upon the importance and sufficiency of the simpler physical methods in ordinary use as a matter of general routine and incidentally referred to the essential help not uncommonly afforded by direct auscultation with which Harvey was certainly acquainted. For adequate examination of the blood of course special methods are usually essential, in addition to the mere use of the microscope, and the help of a skilled expert is not uncommonly required. Reference was made to the employment of the Roentgen rays in examining the heart and pericardium in certain cases and in the diagnosis of aneurysm.

With regard to treatment, after alluding to Harvey as a practitioner and to the remedial measures which he seemed chiefly to employ, Dr. Roberts dwelt upon the great advances which had been made in the therapeutics of the circulatory system within modern experience; how definite our knowledge now was as to what we could and could not accomplish; and how largely we are indebted to experimental pharmacology, as well as to physiological investigation and observation, and the systematic and intelligent study of clinical therapeutics. Dealing with particular methods and agents, he glanced at the value of drugs and of the trustworthy active principles now to be obtained, the great importance of hypodermic and intravenous injection, the remarkable effects of certain glandular structures or their products on the circulatory system as strikingly exemplified by suprarenal extract and adrenalin, the treatment of cardiac affections by physical or balneological methods or a combination of both, the essential importance of rest in a variety of circumstances, the rational use of blood-letting and local removal of blood, the beneficial effects of transfusion of blood under special circumstances, and the extreme value of the modern treatment by injection or infusion of saline solution in certain grave conditions. Dr. Roberts also dealt briefly with the therapeutics of the blood and made a passing allusion to operative treatment in relation to the circulatory system.

The orator then referred to some of the more prominent examples of the beneficial results on an extensive scale of scientific and practical research and as being closely connected with the circulatory system drew special attention to the "brilliant victories" which have been achieved against malaria in different countries and regions, many of them forming an integral part of this vast empire. While paying a tribute of respect and admiration to all those who at the risk of life and health have gone forth to dangerous climates to study and combat with this and other tropical diseases, he mentioned specially Dr. J. E. Dutton, the latest "martyr of science," as he had been aptly called, whose lamented death recently occurred on the Congo, where he had gone to study sleeping sickness on behalf of the Liverpool School of Tropical Medicine. Dr. Roberts expressed on behalf of the College their deep sense of the great services which Dr. Dutton had rendered to the medical profession and to humanity, their profound regret at the premature cutting off of such a valuable life and promising career, and their heartfelt sympathy with his bereaved family and friends. He concluded as follows:—]

The last and most agreeable duty laid upon me by Harvey's direction is to "exhort the Fellows and Members, for the honour of the profession, to continue in mutual love and affection among themselves, without which neither the dignity of the College can be maintained nor yet particular men receive that benefit by their admission into the College

which they might expect, ever remembering that concordia res parvae crescunt, discordia magnae dilabuntur." Who so fitted as Harvey to give us this exhortation at the close of his noble career! Though he could be justly indignant on occasion, his whole life was an example of simple and unassuming dignity, true courtesy and politeness, unselfishness, kindness of heart, and Christian grace and charity. Whatever may have been the state of things in days gone by it is a satisfaction to think that we may now congratulate ourselves on fulfilling Harvey's exhortation in a fairly adequate degree. A spirit of good fellowship prevails amongst us and I firmly believe that we are all cordially united by the bonds of mutual respect and esteem. Moreover, our relations with our working ally, the College of Surgeons, are thoroughly amicable and sympathetic. Thus the dignity of the College is fully maintained and an increasing influence for good is being exerted upon the medical profession generally as well as in other directions. With regard to the future position and reputation of this College in relation to scientific research and the progress of medicine there can be no doubt or misgiving when we see amongst our younger Fellows and Members so many who are endowed with great abilities, who are full of energy, intellectual vigour, and enthusiasm in their work and whose achievements have already brought them into conspicuous prominence and, in some cases, into the foremost ranks of our profession. May we not confidently hope that they will also ever keep in mind Harvey's last exhortation and unflinchingly strive to maintain the high standard of character and conduct which he has placed before them. But should they at any time feel the need of an example, a stimulus, or an inspiration, let them steadily fix their attention and thoughts upon the personality, the life, and the work of our "immortal and beloved Harvey," whom it is our privilege and pride and happiness to commemorate on this anniversary.

Lectures
ON
CARBOHYDRATE METABOLISM.

A Course of Advanced Lectures in Physiology, delivered at the University of London,

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LECTURE I.

GENTLEMEN,—This is a large and important subject, and one which takes us into the question of the series of operations occurring in the applications of food, as a whole, to the purposes of life. The primary classification of the organic portion of food is into nitrogenous and non-nitrogenous. Avoiding descent into particulars, the nitrogenous may be spoken of under the head of proteid. The non-nitrogenous consists of fats and carbohydrates. There are these two distinct divisions to start with, but as we proceed we shall find that these become so intimately mixed up in their passage through the body as to lead to the consideration of the one necessarily bringing in that of the others.

The destination of food is the growth and renovation of the component parts of the body and the production of energy. For these purposes the actual seat of utilisation is within the protoplasmic or biogen molecules constituting the basis of living matter. It is here where the active changes of life occur. Food elements on the one hand and oxygen on the other enter the large and highly complex molecules of which protoplasm is composed and through the play of changes ensuing the phenomena of life are evoked. As an outcome of this proposition the food material has to reach these protoplasmic molecules and to traverse the circulatory system in doing so. In what precise manner the transit is carried out will have to engage our attention. The problem is mixed up with considerations of a complicated nature. Modern research shows that what has to be dealt with is something far otherwise than a simple passage of nutrient chemical principles into the blood at the seat of absorption and their conveyance as such to the seat of utilisation in the tissues. The blood has an intermediate part to play, in connexion with which, as I shall have to point out, there is evidence to show that living protoplasmic action is concerned.

The first stage for all kinds of food to pass through is that of preparation for absorption. Solid matter requires to be brought to the liquid state and all nutrient principles to be placed in a condition to which the property of diffusibility belongs. This is effected by enzyme action, the enzymes being products of secretion of the digestive system adjusted by nature to accomplish the purposes required to be fulfilled and, as we shall see further on, being modified by the character of the demand existing so as to meet the wants arising from the particular kind of food supply. Digestion is a necessary part of my subject in tracing the ingested food on to the disposal of it by utilisation. Something requires to be said upon the point but I do not propose to dwell to any great extent upon it. The polysaccharides—starch and cellulose, the disaccharides—maltose, lactose, and saccharose, and the monosaccharides—dextrose, lævulose, and galactose, are the chief carbohydrates that have to be dealt with in connexion with alimentation. Evidently in some of the lower animals an enzyme is provided that is capable of attacking and dissolving cellulose. In the human subject, however, it is doubtful if cellulose is to any material extent digested. Cytase is the name given to the cellulose hydrolysing enzyme that has been discovered but information with regard to it is in an incomplete state.

Starch may be spoken of as the most important carbohydrate entering into the constitution of our food. Whilst in the state of starch, however, it is an absolutely useless material on account of the resistance it offers to being absorbed. It readily yields, however, to the hydrolysing influence of the enzymes with which it is brought into contact and thus is placed in a position to be susceptible of utilisation in the body. The saliva and pancreatic juice contain a diastatic ferment which possesses the power of carrying it through dextrinoid stages into maltose as an end product. This is the limit of change effected by diastase. The action, however, has been found to be attended with the production of a little glucose attributable, probably, to the presence of a minute amount of the glucose-forming ferment to which the name of glucase is applied. In the intestinal mucous membrane an active glucose-forming capacity exists, so that as a final issue before absorption occurs the hydrolysis of starch presumably proceeds to the end stage of enzymic transmutation, or, in other words, to the production of glucose.

Cane sugar or saccharose may be taken next to starch. This is a very soluble and diffusible principle and therefore is in a position to pass with ease from the alimentary canal into the circulatory system. Did it pass, however, it would subsequently simply filter through the body and escape with the urine in an unutilised state. All experience goes to show that saccharose as such is not susceptible of application in the system. It remains untouched by the living protoplasm and therefore cannot take part in the operations of life. Virtually holding the position of extraneous matter it is dealt with by the system accordingly. It is most easily, however, placed in an altered state by enzyme action and thereby rendered serviceable. Invertase is the name of the ferment that accomplishes this work and its effect is to insert a molecule of water and resolve the body into a molecule of dextrose and a molecule of lævulose. The small intestine is known to contain this enzyme. It is stated that the stomach does not. I have found however,[1] that to a certain extent it does, and that introduced into the stomach when digestion is going on saccharose is pretty extensively converted into glucose. In the ruminant animal a modified state of things exists. The intestine possesses very little transformative energy—not more than is observed in the case of the stomach with animals generally. The inverting power is situated in the multiple stomach and is possessed by the paunch and manyplies to a much higher degree than by the reticulum and by the reed or true stomach. Thus means exist

[1] Physiology of the Carbohydrates, 1894, p. 94.

through the provision of enzyme action in connexion with the alimentary canal for placing ingested saccharose in a utilisable condition. These means must very efficiently fulfil their object, seeing that if saccharose were allowed to reach the circulation it would filter off as waste material with the urine and it is not observed to do so. I have examined the portal blood after the experimental introduction of large amounts of saccharose into the stomach and have obtained no evidence of its presence. By excessive feeding with cane sugar the urine may be rendered saccharine, but glucose is the kind of sugar found. In diabetes the cane sugar ingested escapes as glucose. Apart from the alimentary canal invertase does not exist. This is proved by the intravenous and subcutaneous injection of cane sugar being followed by no signs of the production of glucose. Both the blood and the urine are found to give evidence of the presence of cane sugar but none of produced glucose.

Observation on the yeast organism teaches us exactly the same as we learn from what is observable in connexion with the animal system. Cane sugar is of no use to the yeast cell. Its protoplasm will not touch it for functional application. By the invertase, however, which the organism contains transformation into glucose is effected and now the application occurs. The cane sugar molecule, it may be considered, is not of a nature to be susceptible of being anchored on by, and incorporated into, the protoplasmic molecules of the yeast and as long as it remains in an unchanged state it resists being influenced, just as it resists being touched when introduced into the circulatory system of an animal. Lactose holds a similar position to cane sugar or saccharose and whilst existing as such is not susceptible of protoplasmic utilisation. It is a disaccharide and when hydrolysed splits into a molecule of dextrose and a molecule of galactose. The enzyme that effects this change is called lactase. Knowledge regarding this enzyme has not been extensively worked out. Its chief seat appears to be the mucous membrane of the small intestine and it may be assumed that ingested lactose here undergoes transformation preparatory to absorption from the alimentary canal. As with saccharose it is noticeable that lactose reaching the alimentary canal of a diabetic passes off as glucose in the urine. Evidence is here afforded of the actual occurrence of the change within the system.

It thus appears that each of the carbohydrates that has been spoken of requires to undergo full hydrolysis into a monosaccharide to become fit for utilisation. Starch evidently does not stop at the disaccharide state of maltose, but this, like its congeners saccharose and lactose, passes on into the monosaccharide form. It is seen that by enzyme action the non-utilisable carbohydrates are put into a state to be susceptible of appropriation by living protoplasm, and adaptability in this respect is traceable to the particular requirements existing. The adaptive power of Nature is a matter of common observation in very diverse directions. When the food is not of the character to require the action of a diastatic ferment none is provided. The salivary glands of the infant are not developed at the first period after birth when milk constitutes the natural food. At this time also the pancreatic juice has no power of digesting starch. Bainbridge[1] has recently investigated with respect to lactase the adaptation of the pancreatic secretion to the nature of the food. Independently of the nature of the food lactase is always present in the mucous membrane of the small intestine, but in the case of the pancreas its production is dependent upon whether the animal is being fed on milk or not. In biscuit-fed dogs neither the pancreas nor its secretion contains any lactase. In milk-fed dogs, on the other hand, after the continuance of the feeding for two or three weeks lactase is to be discovered in both the pancreas and its secretion. The mechanism of this adaptiveness has been worked out and found to depend on the influence of the ingested lactose on the mucous membrane of the small intestine. Through the interaction occurring a "tangible something" becomes developed which reaches the blood stream and by it is carried to the pancreas, where it gives rise to the production of lactase for assisting in the digestion of the lactose that is entering into the composition of the food. This "tangible something" which acts upon the secreting cells of the pancreas in the manner that has been mentioned is susceptible of being extracted from the intestinal mucous membrane and produces its effect on being artificially injected into the system. For example, observation has shown that the subcutaneous injection of the extract obtained from a milk-fed dog leads to the production of lactase, whilst with the extract obtained from a biscuit-fed dog no effect occurs.

The object of digestion is the preparation of food for absorption and the several changes in carbohydrate matter that have been referred to fall within the scope of this process. Ideas regarding what is wanted for placing nutrient matter in a suitable position for application in the system have in recent times undergone great development. In this remark I have in view the molecular conformation that is needed to be provided to permit of entry into living protoplasm and thence of taking part in the metabolic changes occurring, a point upon which I shall have much to say later. Formerly it was considered sufficient to regard digestion as bringing the food into a liquid and diffusible state so as to be rendered fit for the occurrence of absorption in compliance, as the idea ran, with the physical laws of osmosis.

It is interesting to look back upon the crude state of knowledge of organic chemistry that existed when the study of the physiological relations of sugar was first started. But little was known about precise methods of preparation for analysis, and analytical procedure had none of the delicacy and precision with which they are invested at the present day. Instead of any actual quantitative determination of sugar in the blood of different parts the estimation was based simply upon the character of the copper test reaction that was obtained. Regarded as a heat producer, the sugar molecule was supposed to undergo direct oxidation in the manner that combustion is carried on in carbonaceous matter around us, and originally the lungs were looked upon as constituting the seat of combustion on account of arterial blood, owing to the mode of experimenting pursued, being regarded as containing to a pronounced extent less sugar than that of the right ventricle. My first experiments upon the physiology of sugar were directed to ascertaining if the destruction of sugar supposed to take place during the transit of blood through the lungs of the living animal would do so during transit through excised lungs subjected to inflation in imitation of respiration. For obtaining the blood for injection I resorted to catheterism of the right ventricle of another animal and this led up to my finding that right ventricular blood during life was not charged with sugar in the manner that had previously been supposed from the condition observed when collected, as had hitherto been done, after the destruction of life. Seeing that there was this disparity between right ventricular blood collected during life and that obtained after death without the adoption of precautions now known to be necessary to escape from the effects of post-mortem alteration it occurred to me that investigation ought by rights to be extended to the liver to ascertain the position in which this organ stood in relation to ante- and post-mortem conditions. I must confess I did not at starting expect to obtain a result different from what had hitherto been met with. On experimenting, however, in a manner to obtain a representation of the condition of the liver at the moment of death it was found that there was no more evidence afforded of the presence of sugar than is derivable from the examination of other constituents of the body. Thus in the case of both right ventricular blood and the liver experiment showed, when conducted in such a way as not to allow time to elapse for the influence of post-mortem change to be exerted, that the conclusions which had been previously formed and which had led to the establishment of the glycogenic doctrine were based upon a faulty foundation.

The glycogenic doctrine also included the destruction of the sugar alleged to be produced by the liver and poured into the circulation through the hepatic veins. After the lungs were no longer looked upon as the seat of destruction the systemic capillaries were assigned as constituting the position in which combustion of sugar, for it has been customary to speak of it as a process of this simple nature, occurred. In support of this view experimental evidence was advanced representing arterial blood as containing considerably more sugar than venous. This, it is known, I could not find to be the case, a large number of carefully conducted experiments having resulted in showing no real difference as regards amount of sugar between the two kinds of blood.

[1] Journal of Physiology, vol. xxx., p. 98, 1904.

Modern investigators have supplied confirmatory testimony and even Lépine, one of the foremost and staunchest supporters of the glycogenic doctrine, has joined in giving expression to a similar conclusion. In the *Comptes Rendus* of the Académie des Sciences for the *séance* of Nov. 2nd, 1903, Lépine and Boulud, in the first place, referring to what they stated in a previous communication, say that very often there exists more sugar in the blood of the carotid artery than in that of the right ventricle, and then proceed to affirm that in some cases at least more sugar is found in venous than in arterial blood. An example cited gives 0·80 per 1000 for the arterial and 0·86 for the venous. What a change of front to be assumed by the French school! An experimental record supplied in former days by Bernard showed a diminution by half of the sugar in arterial blood during transit through the capillaries to the veins, the actual figures belonging to the experiment in question being 1·450 per 1000 for the arterial and 0·730 for the venous blood. With the knowledge we now possess it may be confidently asserted that experimental fallacy must have here existed. If in accordance with the above-mentioned statement of Lépine the right ventricular blood may contain less sugar than the arterial and the blood in the arteries less sugar than that in the veins what, it may be asked, becomes of the glycogenic theory in connexion with which it has been all along contended that exactly the reverse order of things has to be dealt with?

Although the experimental evidence showing the fallacious ground on which the glycogenic doctrine has been built seems to be pretty generally accepted, a lingering idea appears to prevail that the sugar derived from the food passes as such through the circulation to the tissues where it serves for utilisation. Undoubtedly the carbohydrate must reach the tissues, but the great point in connexion with the matter is as to the form under which the conveyance takes place. I will proceed to deal with this question and I think it will be seen that it is quite incompatible with the circumstances existing that a small molecular body like sugar can constitute the medium for the transmission of food carbohydrate from the seat of absorption to that of utilisation.

Everything points to the impossibility of keeping the sugar molecule within the limits of the circulating current. When circulating through the kidney it cannot be prevented from escaping like other small molecular bodies and making its appearance in the urine. Impermeability of the kidney to sugar has been spoken of and suggested as a means of permitting sugar to reach the tissues without running off with the urine. I consider it may be confidently asserted that this suggestion has not a vestige of real support. No matter in what way sugar reaches the circulation it, in proportion to the extent that it does so, shows itself in the urine. The urine thus becomes an indicator of the state of the contents of the circulation as far as sugar is concerned.

Let us pause for a moment and view this matter by reference to our present-day notions of the mechanism of renal secretion. From the method of experimenting that has during the past few years been adopted our knowledge upon this point has been deprived of much of the speculative character that formerly belonged to it. The first event may be pretty safely concluded to be a simple filtration through the Malpighian tuft into Bowman's capsule. In this filtration the water of the blood plasma carries with it, proportionately to their presence, the crystalloids or small molecular bodies—urea, salts, sugar, &c.—that may exist in it, just as happens when water holding in solution various crystalloidal substances is thrown upon an ordinary filter. It is impossible to conceive that any differentiation could occur and that the sugar molecules could be held back whilst molecules of an allied nature should be allowed to pass. Pressure is at work in connexion with the filtration so that the fluid is driven through the walls of the glomerular capillaries. The next event is the passage of the filtrate along the uriniferous tubules where it becomes altered in character and transformed into urine by the agency of the tubular epithelial cells with which it is brought into contact. These are secreting and absorbing cells. They have been likened in their action on the fluid in transit through the tubule to the cells lining the intestinal canal (Cushny). The rate of transit plays an important part. When, as under high blood pressure and renal arterial dilatation, the filtrate is excessive, it may travel through the tubule with a velocity that permits but little alteration to occur, but when the transit is slow evidence of selective reabsorption is presented. Water is reabsorbed freely and, as is noticeable in the intestine, sodium chloride is more freely taken up by the cells than sodium sulphate and sodium phosphate. The cells apparently, like other cells of the body, show no disposition to touch urea. Sugar, presumably, is taken up to some extent, and, further, a modifying effect is in some way or other produced, inasmuch as that which passes on with the urine, as will be seen later, has a lower cupric oxide reducing power than the sugar of the blood. Either an influence is exerted by the cells on the sugar or it might be that the glucose is taken up by the cells in preference to the other sugars belonging to the blood.

I will now proceed to illustrate the relationship existing between blood and urine with reference to sugar by the evidence derivable from its experimental introduction into the system. A little time back I undertook a series of experiments on the intravenous and subcutaneous injection of different sugars. The results were published in the *Journal of Physiology*, vol. xxiv., 1899, the title of the paper being "An Inquiry into the Effects on the Blood and Urine of the Intravenous and Subcutaneous Injection of Various Carbohydrates standing in Relation to Animal Life." The sugars employed consisted of the disaccharides—saccharose, maltose, and lactose, and the monosaccharides—dextrose, lævulose, and galactose. Upwards of 200 observations are included in the paper. The experiments were conducted on rabbits, and for the intravenous injection the vein which occupies quite a superficial position and runs close against the outer edge of the thin part of the ear was selected. Into this vessel it is easy to pass a subcutaneous injection needle without apparent consciousness by the animal and therefore without needing the exercise of restraint beyond being held in a steady position by an assistant. The sugar solution was run in from a graduated burette, to the top of which was affixed an indiarubber bag with inflator to produce the requisite pressure. From 25 to 30 cubic centimetres per minute was the rate at which it was usually introduced. Attention had to be given to secure that the blood was collected without the opportunity having been afforded for post-mortem change to occur. The method adopted was to kill by pithing and instantly afterwards to cut into the chest with scissors and snip across the heart, from which the blood, after turning the animal over, was collected in a basin. Measured by a chronograph the time occupied by pithing and the collection of the blood was upon an average about 15 seconds. The alcoholic method of extracting the sugar from the blood was adopted so as to permit of the nature of the sugar present being ascertained by taking the cupric oxide reducing power before and after hydrolysis by means of boiling with a mineral acid. The ammoniated cupric test (Pavy) which constitutes an exceedingly delicate and at the same time trustworthy test was used for effecting the determinations. The symbol K is employed to represent the cupric oxide reducing power of the sugar present as compared with that of glucose expressed as 100.

I have already said that the urine is an indicator of the state of the blood with reference to sugar. The definite small quantity of sugar in all circumstances present as a standard constituent of the blood is represented in the urine by an equally definite and constant presence of sugar. At one time it was a disputed point as to whether sugar existed in healthy urine. There may be those who remember that a controversy with some warmth introduced into it was some years ago carried on in the pages of THE LANCET. I was one of the disputants and contended on the affirmative side, grounding my position upon the crucial evidence I had obtained of reaction with the fermentation test applied to the product collected from large quantities of urine through the medium of lead and ammonia precipitation. Since this time Emil Fischer's phenylhydrazin test has set the matter completely at rest. An osazone is always readily obtainable from the extracted sugar derived from a moderate quantity of urine and it is even possible for crystals to be procured by direct procedure from the urine in its ordinary state by persons who are skilful in the application of the process. The actual quantity of sugar present is easily revealed by means of the ammoniated cupric test. Whilst Fehling's solution gives no reaction a distinctly appreciable amount is shown to be present by the ammoniated cupric test, and where Fehling's solution gives, as is often seen in concentrated urine, what may be considered as an approach to a reaction somewhat notably high figures, certainly in view of the fact that normal urine is being dealt with, may be obtained. We

speak of urine as being free from sugar when no perceptible reaction is given by Fehling's solution, but all the time a certain amount of sugar, corresponding with that existing in the blood, is present. It is the nitrogenous constituents of the urine that conceal the reaction by giving rise to the development of ammonia and thus preventing the occurrence of a deposit of suboxide. No doubt these circumstances have had something to do with establishing the idea of renal impermeability to sugar and the idea arising out of it that sugar can be present in the blood without passing off with the urine.

It will be convenient to state here that neither in the case of healthy urine nor in that of blood does the sugar actually consist entirely of glucose. It is customary to speak of glucose as the kind of sugar belonging to the blood. Observation shows that this does not represent the full truth. Alike by the cupric oxide reducing power indicated before and after hydrolysis and the osazone crystals obtainable it is demonstrable that sugar of other nature than glucose is present. A communication on this point is to be found in vol. xxvi. of the *Journal of Physiology* for 1901 (On the Nature of the Sugar Present in Normal Blood, Urine, and Muscle, by Pavy and Siau), in which the matter is fully dealt with. After extracting the sugar with alcohol, which would exclude glycogen and the lowest dextrins, the product from blood, urine, and muscle was in each case found to possess a cupric oxide reducing power considerably below that of glucose, and with phenylhydrazin gave an osazone corresponding both in crystalline form and melting point with glucosazone, and another corresponding with the osazone derivable from what has been designated by Fischer and others isomaltose. Probably in reality a mixture of sugars and higher dextrins exists presenting a condition that will serve to account for the very varying degrees of cupric oxide reducing power that may be met with.

Before referring to the injection of sugar experiments it is advisable that a representation should be given of the state of blood and urine existing under normal conditions. The following observations serve this purpose:—

Normal Cardiac Blood.

Animal.	Sugar per 1000. Before hydrolysis.	After hydrolysis.	K.
Rabbit	0·997	1·407	71
,,	0·983	1·255	79
,,	0·967	1·261	74
,,	0·939	1·458	64
,,	1·261	1·740	72
,,	1·039	1·558	67
,,	1·316	1·790	73
,,	1·170	1·520	77
,,	0·992	1·325	75
,,	1·116	1·700	66
,,	1·088	1·300	83
,,	1·200	1·630	75
Mean	1·089	1·485	73
Cat	0·986	1·136	86
,,	1·000	1·190	84
,,	0·883	0·975	90
,,	0·712	1·030	69
,,	1·026	1·409	72
,,	0·684	1·104	62
Mean	0·880	1·140	77
Dog	0·860	1·300	66
Horse	1·160	1·550	75

All the above instances apply to ordinary conditions as regards food and it is seen that in the vegetable feeder the figures stand a little higher taken as a whole than in the animal feeder but there is not any large difference noticeable and looked at individually irregularity is perceptible. To ascertain the condition existing, apart from any question of food, animals were taken after fasting for a period sufficient to occasion not far short of a disappearance of glycogen from the liver. The following were the results given:—

Cardiac Blood of Fasting Animals.

Animal.	Sugar per 1000. Before hydrolysis.	After hydrolysis.	K.
Rabbit	1·23	1·73	73
,,	1·49	2·13	70
,,	1·46	2·06	70
,,	0·93	1·17	79
,,	1·04	1·44	70
,,	1·06	1·34	79
Mean	1·21	1·64	74
Cat	1·27	1·33	95
,,	0·94	0·98	96
Mean	1·10	1·15	96

Normal Urine.

Animal.	Sugar per 1000. Before hydrolysis.	After hydrolysis.	K.
Rabbit	3·33	6·60	50
,,	5·89	11·92	49
,,	0·68	1·80	38
,,	1·03	2·38	44
,,	2·40	5·36	46
,,	3·70	7·90	42
,,	8·80	16·54	53
,,	4·89	9·06	54
,,	2·98	6·14	48
,,	1·96	3·21	57
,,	2·33	4·03	57
,,	4·00	7·00	57
,,	4·66	8·75	53
,,	4·30	7·24	59
,,	6·06	10·32	58
,,	2·22	4·27	52
Mean	3·89	7·03	52
Cat	1·78	3·76	47
,,	1·73	3·33	51
,,	3·02	7·75	39
,,	2·27	5·41	42
,,	2·10	4·64	45
,,	2·17	6·00	36
,,	3·31	4·54	73
,,	1·33	3·21	43
,,	4·90	9·00	53
,,	3·30	7·99	45
,,	4·08	8·36	46
,,	2·73	5·86	47
Mean	2·75	5·87	47
Dog	4·07	6·35	64
Horse	4·41	7·40	60
Human subject	0·91	1·89	48
,, ,,	2·87	5·05	57
,, ,,	4·07	6·25	65
,, ,,	4·41	6·90	64
,, ,,	3·57	5·40	66
,, ,,	2·55	4·25	60
,, ,,	4·88	6·90	71
,, ,,	2·83	4·51	62
,, ,,	2·27	4·0	56
,, ,,	1·66	3·41	48
,, ,,	2·12	4·28	50
,, ,,	1·35	2·65	51
Mean	2·79	4·63	60

I have previously directed attention to the condition of the blood taken after a period of fasting. I will likewise do so for the urine. The specimens were derived from the same set of observations.

Urine of Fasting Animals.

Animal.	Sugar per 1000. Before hydrolysis.	After hydrolysis.	K.
Rabbit	0·68	1·80	38
,,	1·06	2·38	44
,,	2·40	5·36	46
,,	3·70	7·90	42
,,	3·30	6·60	50
Mean	2·23	4·80	46
Cat	4·30	9·00	53
,,	3·60	7·90	45
,,	4·36	8·56	46
Mean	4·19	8·65	48

Looking at these observations it is noticeable in every instance that the cupric oxide reducing power after treatment with the mineral acid is conspicuously higher than that before. It is further noticeable that K runs in a decidedly lower range of figures in the case of the urine than in that of the blood. This I consider has a bearing upon the direction taken by sugar within the animal system and I shall have occasion to comment upon it later. As regards the genesis of the increase of cupric oxide reducing power by the agency of the acid it is only, as I have previously said, by hydrolysis of a carbohydrate or cleavage of a glucoside that the phenomenon can be accounted for.

It follows from what has preceded that not only does healthy urine contain a definite amount of sugar but that the sugar present is not to be regarded as consisting simply or even mainly of glucose. Uric acid and creatinine are cupric oxide reducing bodies and we must not be oblivious of the fact that they must contribute something towards the production of the cupric oxide reducing result obtained. They are not present, however, to a sufficient extent to answer for much in this direction and they can have nothing whatever to do with the increased figures obtained after hydrolysis by treatment with the acid. As a source, indeed, for the production of these increased figures we can only look, as I have stated, to the presence of carbohydrate matter of lower cupric oxide reducing power than glucose or to the liberation of sugar from a glucoside. The phenyl-hydrazine reaction shows that a maltose type of sugar is present, but to account for the results frequently seen to have been obtained the presence likewise of much lower cupric oxide reducing carbohydrate matter than this is needed. That glycogen or animal gum cannot be advanced as the source of explanation I have found is rendered evident by the agency of alcohol in which these principles are insoluble. Urine has been evaporated almost to complete dryness and then extracted with alcohol. The filtered alcoholic extract after evaporation and subjection to the acid treatment has given the same character of result as the urine in its ordinary state.

The amount of sugar that may be found is seen to be very variable. The degree of concentration of the urine seems to be the main factor in connexion with this point. It is a matter of common observation to find in applying the ammoniated cupric test to ordinary urine that it is specially in high specific gravity specimens that the maximum amounts are met with. Indeed, with very high specific gravity specimens it is not an unusual event for Fehling's solution to give a greater or less degree of reaction and instances have from time to time occurred in which the result has been interpreted as indicating the existence of an abnormal glycosuria. The medical practitioner, in fact, requires to be on his guard not to be misled by the result obtained on testing a high specific gravity urine. I might adduce many examples in illustration of what I have stated about the relation of the sugar indication to specific gravity. I will be content with the following. The first two specimens in the list for the human subject were obtained from the same individual and were passed at periods within a few hours of each other. One was of specific gravity 1008 with the sugar indication mentioned of 0·91 per 1000 before hydrolysis and 1·89 per 1000 after. The other had a specific gravity of 1024 with a sugar indication of 2·87 per 1000 before hydrolysis and 5·05 per 1000 after. In an instance where I took the sugar indication of urine of specific gravity 1002 it was found to stand at 0·34 per 1000.

Not only in all urines is there seen to be a decided amount of sugar present but in some which must nevertheless be regarded as falling within the normal category the amount reaches a point that would hardly have been looked for under the notions that have hitherto been entertained. In the case of one of the rabbits, for instance, the figures stood at 8·80 per 1000 before hydrolysis and 16·54 per 1000 after, which gives a K of 53. The K is normal and the condition simply represents an undue proportion of normal sugar indication such as might be produced as a result of concentration. It is the elimination of glucose which is characteristic of abnormal glycosuria and if the high sugar indication had been due to this K would have stood much higher than it did. The effect of adding glucose to healthy urine is theoretically and practically to bring the figures obtained before and after hydrolysis nearer to each other and as the quantity added advances the effect of the lower cupric oxide reducing sugars that happen to be present becomes more and more thrown into the shade until it ceases to be perceptible. Thus K serves to point out, when undue sugar indication exists, whether it is the result of a heightened normal state or an abnormal output of glucose.

I have stated that it is the abnormal output of glucose that belongs to glycosuria as a morbid condition. As the result of treatment of the case the urine may be brought to a natural state and give no reaction with Fehling's solution. It will be understood, however, that it contains sugar in small amount as happens with healthy urine. In these cases a little dietetic deviation readily affects the urine and may cause it to give more or less change indicative of sugar on being boiled with Fehling's solution. The sugar may not be greater in amount than may be sometimes met with in concentrated urine from the healthy person, but on taking the cupric oxide reducing power before and after hydrolysis the resulting K is found to stand higher. The following are a few instances illustrative of this point.

Urine from Mild Glycosurics with associated Output of a Slight Amount of Sugar.

Sugar per 1000. Before hydrolysis.	After hydrolysis.	K.
4·31	5·05	71
5·81	7·20	80
7·35	9·09	81
7·81	9·87	79
6·66	7·48	88
6·25	7·80	80
6·58	8·92	74
4·63	6·94	67
7·69	8·72	88
5·00	6·30	79

Having dealt with the normal state of blood and urine in relation to sugar I will next proceed to consider the condition observed after the direct introduction of sugar into the system by intravenous injection. When a large quantity is introduced in this way it literally runs out through the kidney as it is injected into the vein. It is almost incomprehensible the rapidity with which the sugar in these circumstances reaches the urine. It passes through the kidney almost like passing through an ordinary filter. With the injection of four grammes per kilogramme body-weight sugar was discoverable in quantity in the urine instantly after the completion of the injection. Ordinarily the injection occupied somewhere about 60 seconds and the subsequent instantaneous pithing and collection of the right ventricular blood another 15 seconds. It would be within these limited periods of time that the escape of sugar could be taking place from the kidney and yet it was found after the employment of saccharose that the urine collected from the bladder contained in one instance as much as 64, and in another 74, per 1000 of this sugar. Looking at the lengthy route to be traversed in passing through the kidney the question suggests itself whether it might not pass directly into the urine contained in the bladder by osmosis from the vessels of the organ but presumably the result is not to be

accounted for in this way. With dextrose dealt with in a similar manner the escape was a little less active, the highest figures given being 39 and 47 per 1000.

A strikingly noticeable effect of the injection of sugar in the quantity named when the animals were not killed immediately was a greatly increased flow of urine. The intensity of the diuresis was such that in the collection of the urine as a part of the experiment it was found, in order to avoid loss from spontaneous escape, that considerable vigilance was required to be exercised to keep pace with the activity of secretion. The method of collection was by pressure over the bladder with the thumb.

The determinations made of the amount of sugar present in the blood in the different experiments showed a variation for the different sugars, but comparative uniformity was observable for each kind of sugar. On the sugar reaching the circulation two influences can be mentioned that would immediately come into operation and produce their modifying effect. Water is drawn by osmosis from the tissues and the blood becomes thereby more or less extensively diluted. This, it may be stated, has been found experimentally to occur. There must also be diffusion of sugar from the blood into the tissues. Our knowledge does not permit us to speak of any other tangible physical influence that would come into play.

The following are the respective amounts of the different sugars found in the blood after the injection of four grammes per kilogramme body weight. The sugar in each case is reckoned as glucose and expressed in parts per 1000.

Blood collected Instantly.

Saccharose.	Lactose.	Maltose.	Galactose.	Lævulose.	Dextrose.
24·26	20·00	17·32	13·93	14·94	14·83
24·52	17·90	18·73	11·11	17·00	14·20
21·66	—	—	11·11	17·30	14·94
21·21	—	—	—	14·58	15·48

Blood collected from Animal killed Five Minutes after the Injection.

Saccharose.	Lactose.	Maltose.	Galactose.	Lævulose.	Dextrose.
13·04	10·30	12·05	10·37	10·56	10·20
15·80	10·62	10·04	—	10·56	10·72
—	—	—	—	9·88	—

Blood collected from Animal killed 15 Minutes after the Injection.

Saccharose.	Lactose.	Maltose.	Galactose.	Lævulose.	Dextrose.
12·10	8·50	8·66	8·33	7·22	7·35
12·06	10·00	7·43	—	7·50	8·17
11·66	—	—	—	7·37	8·59
—	—	—	—	—	8·59

Reviewing these figures, the disparity that existed in the instantaneously collected bloods has in great measure disappeared in those collected after the lapse of 15 minutes. In the former instance the disaccharides stand away from the monosaccharides in the larger amount of sugar found and conspicuously is this the case for saccharose. At the end of 15 minutes, however, with the exception of saccharose, which still stands to some extent with higher figures than the rest, the sugar has fallen to a pretty approximate point.

I will now give attention to the experiments in which one gramme of sugar per kilogramme body weight was injected and it will be instructive to view the results for both blood and urine set out in tabular form:—

Intravenous Injection of One Gramme per Kilogramme.

Blood collected Instantly.

Saccharose.	Lactose.	Maltose.	Galactose.	Lævulose.	Dextrose.
6·53	6·12	6·43	6·14	6·48	6·53
5·54	—	—	—	—	5·30
—	—	—	—	—	6·53

A striking uniformity is here noticeable for all the sugars.

Blood collected at the End of Five Minutes.

Saccharose.	Lactose.	Maltose.	Galactose.	Lævulose.	Dextrose.
4·90	4·34	3·63	3·39	3·92	4·22
4·37	—	—	—	—	—

Blood collected at the End of 15 Minutes.

Saccharose.	Lactose.	Maltose.	Galactose.	Lævulose.	Dextrose.
3·60	3·81	3·51	2·66	2·37	2·32
3·22	—	—	—	—	3·14

Blood collected at the end of 60 minutes.

Saccharose.	Lactose.	Maltose.	Galactose.	Lævulose.	Dextro
1·88	2·33	1·59	1·66	1·29	1·42
1·97	2·91	2·05	1·79	1·49	1·59
—	1·75	1·70	1·66	1·66	1·50
—	—	—	1·73	1·41	1·51
—	—	—	1·79	1·37	1·55
—	—	—	—	1·60	1·12
—	—	—	—	—	1·38
—	—	—	—	—	1·28
—	—	—	—	—	0·70
—	—	—	—	—	1·22
—	—	—	—	—	1·31
—	—	—	—	—	1·41
Mean: 1·92	2·33	1·78	1·72	1·44	1·33

Urine.

Sugar, expressed as glucose, eliminated in one hour after the intravenous injection of one gramme per kilogramme body weight of the undermentioned sugars. The figures represent percentages of the amounts injected.

Saccharose.	Lactose.	Maltose.	Galactose.	Lævulose.	Dextrose.
80·4	51·9	56·8	31·7	19·7	12·8
82·8	45·1	56·3	38·6	28·6	9·2
80·0	49·1	56·5	31·7	15·6	2·8
—	—	—	19·6	19·8	11·7
—	—	—	23·1	19·5	28·1
—	—	—	—	22·7	15·4
—	—	—	—	—	19·2
—	—	—	—	—	17·0
—	—	—	—	—	10·2
—	—	—	—	—	11·3
—	—	—	—	—	18·4
—	—	—	—	—	31·5
Mean: 81·0	48·7	56·5	28·9	20·9	15·6

Thus it is seen, reading from the mean of the results, that 81 per cent. of the saccharose injected ran off with the urine in the space of an hour, 48·7 per cent. of the lactose, and so on for the other sugars. The results tally with the information given by the assemblage of experiments already dealt with. The saccharose molecule does not seem, if allowed to reach the circulation as such, to be susceptible of being touched by the system and simply passes off into the urine in an unchanged state. Lactose and maltose to some extent correspond but it looks as though they were partially put into a position to proceed to utilisation. With considerably more force does this remark apply to the monosaccharides, the elimination of these having been upon a much more limited scale. Of the three the least extent of elimination occurred with dextrose and the highest with galactose. Lævulose stood not far from midway between the two. It is unassimilated or untouched molecules that escape with the urine. Those which pass into the assimilated state are placed in a position to be removed from liability to pass off with the urine.

Intravenous Injection of 0·250 Gramme per Kilogramme.

A further set of experiments was performed with the employment of a quarter of a gramme per kilogramme, means which $\frac{1}{4000}$th of the body weight. In this series only saccharose and dextrose were made use of.

Saccharose.

Intravenous Injection of 0·250 gramme of Saccharose per kilogramme.

—	Sugar as glucose in blood per 1000.	Sugar as glucose in urine per 1000.
Killed instantly	2·550	7·20
Killed at end of 5 minutes	1·973	14·80
Killed at end of 15 minutes	2·226	68·00

Dextrose.

Where large amounts of dextrose are injected the sugar met with in both blood and urine shows itself in the form of glucose. The quantity of unchanged dextrose is such as to swamp the sugar of a lower cupric oxide reducing nature that may be present. I therefore have not considered it necessary previously to give more than one set of figures—namely, those representing the sugar in the fully hydrolysed state. In the case, however, where small amounts of sugar are employed it is susceptible of being seen that some of it is changed by the system into a lower cupric oxide reducing body. On this account I consider it will be instructive to

give both for the blood and the urine the figures obtained before and after hydrolysis.

Intravenous Injection of 0·250 Gramme of Dextrose per Kilogramme.

—	Blood per 1000.			Urine per 1000.		
	Before hydrolysis.	After hydrolysis.	K.	Before hydrolysis.	After hydrolysis.	K.
Killed instantly	2·400	2·660	90	—	—	—
Killed at end of five minutes	2·333	2·910	80	5·44	9·80	56
Killed at end of 15 minutes	1·430	2·040	70	4·90	10·50	46
Killed at end of 60 minutes	1·226	1·838	66	12·56	18·20	69
" "	1·332	1·815	71	7·30	14·20	51
" "	1·456	1·913	76	8·53	17·68	48
" "	1·333	1·822	73	2·28	5·67	40
" "	1·372	1·866	74	7·56	13·32	56

These results following the intravenous injection of a quarter of a gramme per kilogramme of saccharose and dextrose show that as regards the blood there is not much difference observable in the amount of sugar constituent. As regards the urine, however, evidence is given of the disposition of saccharose to pass out of the system to an extent altogether beyond that observable for dextrose. It is quite in accord with what might be expected from all that has preceded, that saccharose should be thrown out in the manner no is able from the system, but notwithstanding the smallness of the quantity introduced distinct signs are given in the case of dextrose also of a certain amount of escape in an unutilised state. Even at the end of an hour the blood had not regained its normal condition in relation to its sugar constituent and with respect to the urine the figures give evidence of standing at a higher range than normal. The cupric oxide reducing power of the carbohydrate present, represented by K, is in accord with the usual order and shows the influence exerted within the system in carrying carbohydrate to a lower cupric oxide reducing state. After the lapse of 15 minutes K is observed to stand at its usual point for the blood under ordinary conditions. For the urine K stands in its customary position at a considerably lower point than that for the blood.

Subcutaneous Injection.

I will now proceed to the consideration of the experiments in which the several sugars were injected subcutaneously instead of intravenously. The difference in the circumstances that presents itself will be readily realised. Introduced into the subcutaneous tissue the sugar solution is dispersed amongst the living structural elements of the areolar tissue and thence becomes only gradually absorbed. It is difficult to estimate how long it would take for complete absorption to occur, but in some of the experiments when the animal was killed two hours after the injection it was found that a watery condition of the tissue at the seat of operation existed and that evidence of the presence of sugar was obtainable. To promote activity of absorption the part was well kneaded after the injection so as to secure dispersal of the fluid. The bladder was emptied in the usual manner by pressure with the thumb before the injection. This, however, was not always effectual and in the table that has been framed loss of urine in circumstances that permitted of estimation is represented by an attached ? and by + where the loss could not be estimated.

In the following table saccharose and lactose are seen to comport themselves in the same manner as after intravenous injection. Allowance must be made for the circumstance that absorption has to occur before they can reach the circulation and thence the urine. Allowing for this the results point to their not being touched by the system but simply transmitted through it as so much extraneous matter. Galactose, lævulose, and dextrose evidently stand in a different position. In some instances the urine contained a somewhat high percentage of sugar but in others little or no effect was observable. It looks as though the capacity existed for its being taken on by the system in some animals to a greater extent than in others. However this may be, a striking fact is brought clearly into view—namely, that the assimilative power of the system in general over these sugars can count as almost nothing compared with the

Subcutaneous Injection of One Gramme per Kilogramme Body Weight in 10 per cent. Solution. Animals Killed Two Hours Afterwards.

Sugar employed.	Blood.			Urine.			
	Before hydrolysis. Per 1000.	After hydrolysis. Per 1000.	K.	Before hydrolysis. Per 1000.	After hydrolysis. Per 1000.	K.	Sugar eliminated in relation to sugar injected. Per cent.
Saccharose ...	0·933	1·770	—	0·48	24·0	—	56
	0·793	1·400	—	4·40	23·6	—	59
	0·823	1·530	—	1·09	53·6	—	46
Lactose	1·333	1·831	72	61·18	128·38	50	41·6
	1·354	1·771	76	33·54	63·02	53	59·7
	1·444	1·999	72	63·00	134·20	48	23·5
	1·547	2·166	71	45·20	86·66	52	61·9
Maltose	1·761	2·978	59	2·80	6·41	43	7·4
	2·121	3·256	65	15·60	25·92	60	10·4
	2·021	3·456	58	7·00	13·71	51	8·5?
	1·547	2·363	65	23·10	35·44	78	10·7
	1·694	2·189	77	2·73	6·04	45	1·3
	2·039	2·427	85	7·06	16·51	42	3·6
Galactose ...	1·42?	1·625	87	40·00	40·00	100	15·5
	1·333	1·666	80	17·33	17·33	100	24·0?
	1·468	1·805	81	6·58	6·83	96	13·1
Lævulose ...	1·300	1·430	97	13·07	—	—	7·0
	0·930	0·940	98	41·10	—	—	8·2
	1·310	1·450	90	8·51	—	—	8·1
Dextrose	1·212	1·655	73	2·12	5·32	39	6·4
	1·416	1·961	73	9·07	14·29	64	2·5
	1·414	1·687	83	11·21	22·40	50	9·6
	1·371	2·030	67	16·30	22·80	71	2·7
	1·353	1·806	71	3·50	8·12	40	6·3?
	1·465	1·875	77	13·60	24·00	56	3·1
	1·238	1·625	76	7·88	18·66	42	4·6+
	1·274	1·673	76	8·12	17·66	46	2·5
	1·020	1·238	82	1·62	5·20	30	6·4?
	0·866	1·294	67	4·13	9·86	42	4·5
	1·142	1·493	76	12·38	25·00	48	4·9

assimilative power that must evidently be in operation in connexion with the occurrence of absorption as a normal procedure from the alimentary canal. Looking at the relative position that the three monosaccharides hold in relation to disappearance from view through the instrumentality of the system, galactose shows itself to be in a decided manner less susceptible of appropriation than the other two. According to the figures in the table lævulose was thrown off to about a midway extent between galactose and dextrose. The order followed by the three agrees with that observed after the one gramme per kilogramme intravenous injection.

The position of maltose appears at first sight to be very remarkable. In the one gramme per kilogramme intravenous injection experiments maltose was thrown out of the system with the urine to a rather larger extent than lactose. In the subcutaneous injection experiments it is seen to stand pretty nearly in the same position as dextrose. Reference has been made to maltose being carried by the agency of the glucase present in the mucous membrane of the intestine into glucose at the time of absorption. Glucase is stated to have been found to a certain extent in the blood. It may be concluded that it cannot exist there to any material extent looking at the figures that were obtained after the intravenous injection of maltose. If any notable conversion of maltose into glucose had taken place in the blood it may be rationally assumed that the urinary figures would not have stood in the position they did. Introduced into the subcutaneous tissue the sugar elimination for maltose and dextrose is approximately the same. I think the conclusion may be drawn that in the subcutaneous tissue

the maltose must meet with an adequacy of glucase to effect its conversion into glucose before absorption. In a subcutaneous injection the solution passes virtually into a lymph space structure and here falls in contact with active protoplasmic matter which may be said to mean presence of various kinds of enzymic power.

I have previously spoken of the influence exerted by the system in the direction of carrying glucose into a lower form of cupric oxide reducing carbohydrate. With the array of evidence presented there can be no doubt of the occurrence of this change. It is, indeed, one that stands in a line with the transmutation of glucose into glycogen. The power of the living system to perform this latter operation no one for a moment disputes. In the case of the other event there is a much less extent of action involved but, as I have said, the action that occurs is in the same direction. Evidence of its occurrence is afforded both by the subcutaneous injection experiments and with the intravenous injections where limited amounts of dextrose were employed. With the injection of large amounts of dextrose no effect is visible, presumably on account of the changed dextrose being concealed from view by the large presence of unchanged material. Galactose does not appear to be altered in the same way. Neither after the subcutaneous nor the intravenous injections is there any decided indication of a lower cupric oxide reducing body being produced. In the case of lævulose the disclosure of information is defeated by the destructive action exerted by the process of boiling with the acid. It follows if a loss of lævulose occurs that this would prevent the display of any increased cupric oxide reducing effect that might be produced.

As to the method by which the dextrose is moved into a lower cupric oxide reducing body something requires to be said. We have long been familiar with the movement of carbohydrate matter in the opposite direction through the agency of enzymic action and until recently enzymes have been looked upon as only capable of hydrolysing or breaking down. Latterly, however, they have been viewed as possessing wider power, and are now regarded as taking part in the process of building up as well as in that of breaking down. Croft Hill in 1898 was the first to adduce evidence of the possession of synthetic as well as analytic power by enzymes. He showed that the same ferment might, according to the existing conditions, operate in the direction of breaking down or in that of building up. The play of reversible ferment action has been confirmed by the observation of others and it seems to have attained the position of an accepted doctrine. If by reversible enzyme action the molecules of a monosaccharide can be made to combine and become built up into molecules of higher construction there is nothing unintelligible in dextrose passing, when brought within the sphere of influence of protoplasmic matter, the source from which enzymes take their origin, into forms of carbohydrate of less cupric oxide reducing power.

GASTROSTOMY FOR CARCINOMA OF THE ŒSOPHAGUS AND ITS RESULTS.

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GASTROSTOMY is an operation about which many different opinions have been held and the methods of performing it are so numerous, each method being designed to overcome some defect or drawback in another, that it seems desirable to record a series in which the same method was adopted in each case and to analyse the results. All the patients were suffering from malignant disease which was primarily in the œsophagus. In four of the patients the larynx was affected by extension from the œsophagus. Any radical operation was therefore impossible. This point that gastrostomy can only be a palliative operation, should always be remembered. If it can be shown to be beneficial to the patient and the disadvantages are outweighed by the advantages, the former being slight and insignificant, then the operation is to be strongly advised. The early methods of performing the operation were frequently followed by the constant escape of the gastric contents with the result that widespread excoriation of the skin of the abdomen followed and the miseries of the unfortunate patient were immensely increased. To prevent this happening is the most important point and if this can be accomplished the amount of inconvenience is practically *nil*. At the present time one of my patients is doing work which involves walking or riding for several hours a day.

The method which I have adopted is a modification of Frank's operation. The abdominal cavity is opened by a vertical incision two or three inches long, made to the left of the mid-line and beginning just below the eighth costal cartilage; the fibres of the rectus muscles are separated parallel to their direction. The stomach is usually found tucked up under the left lobe of the liver; it is generally contracted, especially in its vertical direction. A portion of the anterior wall is selected as near to the cardiac end as possible and brought out of the wound on the abdominal wall. A conical portion, with a base about one and a half inches in diameter and from two to two and a half inches in length, is formed so that it can be laid to the left of the incision on the outer surface of the parietes without tension. If on account of the contraction of the stomach the base of the cone cannot be made so large it is not very important. But it is important that the cone should be sufficiently long. To the apex of the cone, which should be made as near as possible to the lesser curve, two guide sutures are passed through the serous and muscular coats, the interval between them being about half an inch. A second incision, parallel to the first and one and a half inches from it, is made through the skin over the outer part of the left rectus muscle. This incision is about an inch in length and opens the anterior layer of the sheath of the rectus, the muscular fibres being separated longitudinally for the same distance. A blunt dissector is then passed from the second to the first incision through the fibres of the muscle, which is then separated into an anterior and posterior layer by moving the dissector in an upward and downward direction. The extent of the separation must be sufficient to allow the cone of the stomach to be easily drawn through the gap, traction being made on the guide sutures which have been passed from the first to the second incision, whilst the base of the cone is manipulated into the widest part of the gap—i.e., close to the first incision. By this manœuvre the stomach-cone becomes completely surrounded by muscle and there are two distinct bends in it—viz., at the base and at the apex. As there is usually considerable traction on the cone and a tendency for it to retract its length should be as great as possible and at the second incision the apex should project about a third of an inch. It is a good plan to fix the apex to the sheath of the rectus and skin at once in order to prevent the cone retracting. For this purpose four stitches, one on each side, one at the upper and one at the lower part, are enough. They involve the sero-muscular coats of the stomach. The base of the cone is fixed along its exposed right margin to the right-hand margin of the parietal incision, the stitches taking up the serous and muscular coats of the stomach and the peritoneum with the posterior sheath of the rectus and some muscle fibres. Four or five are usually sufficient, and if any opening is left at the upper or lower end of the peritoneal incision this is closed in the usual way, the stomach being also caught up by the stitches if it is thought advisable to do so. In passing the stitches through the wall of the stomach any vessels must be avoided as the bleeding is troublesome. The superficial part of the wound is closed by interrupted stitches, which also unite together the anterior layer of the rectus sheath and the superficial fibres of that muscle. A collodion dressing is then applied to the wound and the stomach is opened between the guide stitches, the aperture being made large enough to take a No. 9 or No. 10 red rubber catheter which is kept in position by a stitch attaching it to the skin. If any vessel in the submucous layer is wounded a ligature is at once applied, otherwise the bleeding may continue and the patient lose a large quantity of blood, which is inadvisable as these patients are, as a rule, very anæmic and feeble. Three or four ounces of peptonised milk with brandy are put in the stomach in order to see that the tube is working properly and to stimulate and to feed the patient. There is no danger in this plan, or, at any rate, no bad result has followed in any of my patients. In the last three or four cases I have not fixed the mucous membrane to the skin—the frequent passage of the catheter prevents the orifice from

closing. The catheter is left *in situ* for four or five days and is then removed, being passed only when the patient is fed. As there is sometimes a little redness round the stitches at the apex of the cone it is well to remove one or two of them about this time. The redness has been especially noticed when the patient is very emaciated. The other stitches are taken out about the tenth day.

It is interesting to notice how rarely the patient retches or vomits after the operation and that very little pain is experienced. From the first he is fed every four hours, each feed consisting of four or five ounces of peptonised milk and brandy. The quantity is gradually increased till eight or ten ounces are given at a time, the amount of brandy and peptonisation being gradually diminished, egg and milk, Benger's food, &c., being substituted. As a rule, the patient cannot take more than eight or ten ounces with comfort at a time. He is generally able to get up in about ten days, but it is advisable not to allow him to get up too soon as this may cause some escape of the gastric contents and redness of the skin.

The important points in the method are: (1) that the whole cone of stomach is surrounded by muscle, and (2) the length of the cone. The muscle acts as a sphincter and effectually prevents the gastric contents escaping, and therefore excoriation of the skin is absent. In some of the patients the rectus was very much atrophied and when split each layer was very thin. But even so the escape of the contents of the stomach was prevented. In the last patient there was at first a slight leakage but the skin was only affected to a small extent and this was due in part to the fact that some sloughing occurred from the stitches being tied too tightly and the patient being very emaciated. When healing occurred, which it did in a month, there was no escape. It is obvious that if the stomach is so contracted that the cone cannot be made long enough, some other method such as Witzel's, would have to be adopted. However, in none of my cases was this difficulty met with.

One of the most striking after-effects of the operation is the recovery of the power of being able to swallow with ease. The patients in Cases 3, 11, 12, 13, and 14 were quite unable to take either liquids or solids, or only the former with extreme difficulty. Each of these patients became able to swallow such foods as custard, beef-tea, bread-and-milk, and sometimes mincemeat or mashed potatoes. This

TABLE OF CASES OF GASTROSTOMY FOR CARCINOMA OF THE ŒSOPHAGUS.

Case.	Sex.	Years of age.	Duration of symptoms.	Site of stricture.	Date of operation.	Date of death.
1	M.	62	Six months. No solid food for three months. Occasionally regurgitation of food.	11 inches from the teeth.	August 20th, 1901. No. 8 catheter put into the stomach.	August 31st, 1901.
2	M.	50	13 weeks. Rapid loss of flesh and increasing difficulty in swallowing.	8½ inches from the teeth.	Sept. 2nd, 1901. No. 10 catheter used.	?
3	M.	42	Six months. Regurgitation of fluids for one month.	17½ inches from the teeth.	June 3rd, 1902.	Jan. 3rd, 1903.
4	M.	62	Six months. For nine weeks only fluids taken.	10½ inches from the teeth.	July 27th, 1902.	Dec. 25th, 1902.
5	M.	57	Four months. Steadily increasing difficulty in swallowing solids. Unable to swallow liquids.	10½ inches from the teeth.	August 20th, 1902.	August 22nd, 1902.
6	M.	66	Three months. For one month able to take liquids only. Partial regurgitation of food on attempting to swallow.	In lower part of the œsophagus.	July 8th, 1902.	End of December, 1902.
	M.	68	Three months. Difficulty in swallowing solids. For two months there was shortness of breath. For three weeks the patient was unable to take solids or liquids.	Upper part of the œsophagus; the larynx was involved.	August 30th, 1902.	Sept. 16th, 1902.
8	M.	33	12 months. 11 weeks ago there had been severe dyspnœa. Tracheotomy was performed. Since that time the patient had only been able to take liquids.	Upper part of the œsophagus; the larynx was involved.	Dec. 23rd, 1902. No. 10 catheter.	Feb. 11th, 1903.
9	M.	60	Two months. The patient could only take liquids.	7½ inches from the teeth.	March 31st, 1903. No. 10 catheter.	April 17th, 1903.
10	M	73	Six months. Much coughing on attempting to swallow liquids.	—	May 22nd, 1903. No. 10 catheter.	June 3rd, 1903.
11	M.	53	Three months. For ten days the patient was able to take fluids only with difficulty.	14 inches from the the teeth.	August 8th, 1904. No. 10 catheter.	Dec. 20th, 1904.
12	M.	46	Nine months. For a week the patient was unable to take even liquids; regurgitation.	9½ inches from the teeth.	August 16th, 1904. No. 10 catheter.	Sept. 28th, 1904.
13	F.	40	Eight months. For four months the patient was not able to take solids; for one week he was unable to take liquids.	Upper part of the œsophagus; the larynx was involved.	Sept. 26th, 1904. No. 10 catheter.	January, 1905.
14	M.	62	Six months. For two months there had been increasing difficulty in swallowing liquids.	11½ inches from the teeth.	Dec. 23rd, 1904. No. 10 catheter.	Still living and well.
15	M.	49	Four and a half months. Severe attacks of coughing on attempting to swallow liquids.	Upper part of the œsophagus; the larynx was involved.	April 14th, 1904. No. 8 catheter.	Still living.

Remarks.—Case 1.—The patient was very ill and emaciated; no leakage from the stomach opening. Necropsy: No perforation into the trachea; the stricture was four inches below the cricoid; there was pneumonia in the right lung. Case 2.—There were secondary nodules in the liver; the lumbar glands were affected. The patient was discharged from hospital on Sept. 27th, 1901. Case 3.—June 7th: Catheter removed and passed when required. 10th: Able to take liquids. 14th: Able to take bread and milk. There was never any redness of skin around gastrostomy wound or regurgitation through the opening. Case 4.—August 1st: Catheter removed and passed when required. The patient was discharged from hospital on August 10th. There was no leakage of gastric contents. Case 5.—Necropsy: The growth was opposite the bifurcation of the trachea; perforation into the right bronchus. Case 6.—A feeble old man: a bad attack of bronchitis after operation. There was some excoriation round the stomach opening. Quite healed in a month's time; no leakage. The patient did not recover power of swallowing. Case 7.—Necropsy: The growth involved upper one and a half inches of the œsophagus and the posterior half of the larynx; there was recent septic peritonitis; there was no food in the peritoneal cavity. Case 8.—Dec. 3th: Tube removed; no leakage from gastrostomy wound. Necropsy: The growth was on the upper end of the œsophagus, involving the larynx; there was a perforation of the œsophagus in the neck, leading into an abscess on the right side of the neck. Case 9.—April 6th: Tube removed; no leakage of gastric contents. Necropsy: there was a perforation into the trachea; pneumonia in the right lung. The upper limit of the growth was below the level of the cricoid. Case 10.—May 27th: Tube removed; no leakage. Necropsy: The growth was at the level of the bifurcation of the trachea. There was a perforation into the left bronchus and into the lung; septic broncho-pneumonia and abscess in the left lung. Case 11.—August 13th: Tube removed. August 19th: Discharged; can take liquids. Subsequently able to swallow food in comparative comfort; very little redness of skin; slight leakage if too large feeds are given. Case 12.—August 27th: The patient was able to take soft solids. Sept. 4th: Discharged; no redness or leakage even on coughing. 28th: Death from double pneumonia. Case 13.—Operation performed under local anæsthesia. Oct. 17th: The patient was able to swallow liquids; gastrostomy opening gave her no trouble. Case 14.—Dec. 28th: Tube removed and passed when required. The patient was discharged on Jan. 6th, 1905. There is no leakage and the patient is able to take soft solids comfortably. He feeds himself once or twice daily by the gastrostomy opening. Case 15.—April 20th: Catheter removed. May 3rd: The patient was able to swallow with comfort. Discharged on May 25th. The operation was performed under eucaine. There was some sloughing of the skin around the gastrostomy opening. Quite healed in a month; slight leakage. The patient, who was feeble and emaciated, improved much after the operation.

recovery generally occurred a week or ten days after the operation and the improvement took place to such a marked extent in one patient that he only used the gastrostomy tube twice a day. In the majority of cases this improvement is only temporary, perhaps lasting some weeks, and the benefit to the patient a corresponding time. Still, if one can say to the patient that he will in all probability be able to take at least such foods as these in a natural way a great point is made in favour of the operation, for the patient usually asks, What will be the effect of the operation on his swallowing? At the same time one is able to assure the patient that he will not die from starvation. The probable explanation of this recovery is that the growth not being irritated ceases to be inflamed and consequently shrinks, the lumen of the œsophagus being thereby opened up.

Another striking feature is the improvement in the general health and condition of the patient which occurs in many cases. A patient who has been starving gains flesh and colour and strength. Some patients have attacks of coughing whenever they attempt to swallow. This is due to (1) some of the food getting into the larynx when the growth is high up in the œsophagus and possibly involving the larynx; or (2) a small perforation from the œsophagus into the air passages, or the separation between them being very thin. This latter class of patient is very unfavourable for operation—e.g., Cases 5, 9, and 10 may be cited. Each patient died soon after the operation from perforation. The first group is not so unfavourable. One of my patients was a woman, aged 40 years. She had a growth in the upper part of the œsophagus extending on to the left aryteno-epiglottic fold. Externally a good deal of thickening could be felt in the region of the larynx. Any attempt at swallowing caused a good deal of coughing. On Sept. 26th, 1904, gastrostomy was performed under eucaine local anæsthesia. Three weeks later the patient was able to take liquids without coughing and she lived in comparative comfort for four months, having been able to do some light work and to go out. The gastrostomy acted perfectly and never gave her any trouble. A similar case was that of a man, aged 49 years. He had a growth in the upper part of the œsophagus extending on to the arytenoids, the left cord being paralysed. Gastrostomy was performed on April 15th, 1905. The patient at once began to improve in general health and a fortnight later he was able to take liquids and soft solids, such as minced meat, without causing coughing. Local anæsthesia was employed in these two cases on account of the involvement of the larynx which made the administration of a general anæsthetic inadvisable. In the second case the skin around the opening into the stomach sloughed for a short distance and this is attributed partly to the effects of the eucaine and partly to the stitches being tied too tightly, for around two of them the skin became white and necrotic. In spite of this there was no escape of the stomach contents, except when the patient coughed after he had been fed, and the redness of the skin, which never extended more than an inch from the stomach opening, was due more to inflammatory reaction than to irritation of the stomach contents. In another patient, aged 66 years (Case 6), who was also very feeble and emaciated, a limited area of sloughing of the skin occurred, and although this patient had a bad attack of bronchitis after the operation there was practically no leakage or regurgitation from the stomach opening.

It has been objected that the track of the cone of the stomach becomes straight instead of remaining as it is made at the operation, so that the base of the cone and the apex lie behind one another, the valvular arrangement becoming inefficient. It is true that in some cases the track does becomes straighter, but even when this occurs leakage does not follow because the sphincteric action of the rectus still persists. Consequently any redness or excoriation of the skin is confined within the smallest limits, scarcely sufficient to cause any inconvenience, and in many cases is absent altogether (Cases 3 and 14). It is advisable to remove the tube on the fourth or fifth day and to pass it only when the patient is fed, the aperture meanwhile being covered by a piece of sterilised dressing. The patient soon learns to pass the tube and to feed himself. This is much more comfortable than leaving the tube constantly in the stomach opening (where, in fact, it rarely stays) and putting a clip on to it. None of my patients have had any trouble in passing the tube and there has been no tendency for the opening to close, as the feeds being given four-hourly there is not any likelihood of the opening becoming unduly contracted.

Of the 15 patients on whom I have operated nine have lived sufficiently long for an estimation to be made of the results of the operation. The time the patients lived after the operation varied from six weeks to seven months. Two of them are still alive—one more than five months and the other six weeks after the operation. All of them were kept under observation and were seen from time to time or were communicated with by letter. Not one of them regretted having had the operation performed, as the relief of the symptoms and the improvement in general health were obvious and the inconveniences of the operation were slight. In Case 3 the patient enjoyed good health and was able to get about till within a week or two of his death. In Case 14 the patient is doing work as a clerk. The patient in Case 8 was confined to bed during the whole time he lived but the local condition, involving as it did the larynx to such an extent as to necessitate tracheotomy, was a sufficient explanation of this. There can be no doubt that but for the gastrostomy this patient would have died two months sooner than he actually did and though his was so unfavourable a case the gastrostomy acted exceedingly well and there was no leakage from it.

The short time the patients survived at once raises the question, Does the operation prolong life for any appreciable length of time? The answer must always be doubtful because one can never tell how soon the growth will perforate in to the trachea or bronchus, thus setting up septic processes in the lungs. This was well illustrated in Case 12. The patient was a man, aged 46 years; a small bougie could be passed into the stomach; a larger one stopped nine and a half inches from the teeth. The operation was performed on August 16th, 1904, and the patient left the hospital much improved on Sept. 4th. For more than three weeks he continued to do well; he then died at his home from double pneumonia after two or three days' illness. Cases 9 and 10 are similar. On the whole, it may be said that at best the operation can only prolong the patient's life for a short time, but it saves him from dying from starvation and his death is attended by a minimum of discomfort as it is usually due to septic complications in the lungs.

Five of the patients died soon after the operation. One of them (Case 7) had recent septic peritonitis. The region of the wound was healthy and it did not appear that the peritonitis was caused by any escape of gastric contents or was due to food passing into the peritoneum from the opening into the stomach. The other four died as a result of perforation into the trachea or a bronchus. As death took place on the eleventh, second, seventeenth, and eleventh days respectively, the operation can scarcely be said to have been the direct cause of death. The remaining patient left the hospital in the fourth week and was not seen again. This patient had secondary deposits in the liver and lumbar glands. He suffered a good deal from pain in the back which was not relieved by the operation, but the gastrostomy was acting quite well.

Lastly, the important question arises, How soon should the operation be done after the diagnosis of malignant disease of the œsophagus has been made? It is to be remembered that the majority of patients come for treatment and advice when the symptoms are well marked, and therefore the sooner the operation is performed the better. If, however, the patient is able to take sufficient nourishment without coughing it may be delayed, provided that the patient is seen at regular and short intervals, not longer than a fortnight, so that the progress of the disease can be watched. If there is any increase in the difficulty of swallowing, if coughing is produced by the attempt to swallow, or if there is regurgitation of food into the mouth, then the operation should be advised forthwith, the surgeon clearly explaining to the patient the results which may be expected. It is a good plan to give the patient a liquid to drink and to see how it is swallowed. A much better estimation of the amount of narrowing of the œsophagus can be formed by this actual observation and therefore a better guide as to the advisability of immediate operation than by what the patient says. Bougies should also be passed and the size of the largest one which can be passed through the stricture, as well as the difficulty in passing it, are important aids in helping one to come to a decision for or against operation. Unfortunately many of the patients are so emaciated and so exhausted that it is scarcely worth while advising them to undergo the operation; and, of course, when there are signs of affection of the lungs it is useless to operate.

Harley-street, W.

EXPERIMENTS ON THE DISINFECTION OF VIBRIO CHOLERÆ ASIATICÆ AND BACILLUS DYSENTERIÆ (FLEXNER) WITH CYLLIN AND CARBOLIC ACID.

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IN previous papers[1] I have discussed briefly the relative merits of certain disinfectants when applied directly to infective organisms, after the method of Rideal and Walker. The present experiments are a continuation of this work on the same lines. Care has been taken throughout that uniformity in the following conditions should obtain: time of contact of disinfectant with microbe; age of culture of the microbe used; constitution and reaction of the medium upon which the microbe is grown; vital resistance of the species of microbe used; quantity of disinfectant added to the culture; temperature of medication; and temperature and time of incubation.

A virulent culture of vibrio choleræ Asiaticæ was procured and sown in bouillon rendered slightly acid to phenolphthalein but neutral to litmus (acidity equivalent to 15 cubic centimetres normal NaOH per litre). A sample of phenol was standardised by bromine and a series of dilutions in distilled and sterile water was made. Into five sterile test tubes were placed respectively five cubic centimetres of dilutions 1 in 70, 1 in 80, 1 in 90, 1 in 100, and 1 in 110, and into each of these serially at intervals of exactly 30 seconds five drops of a 24-hours bouillon culture of vibrio choleræ incubated at 37° C. were deposited. Continuing the 30 seconds interval a single loopful was removed in turn from each of the medicated cultures after careful shaking and sown in a bouillon tube. The platinum loop was thoroughly sterilised after each inoculation. All vessels, flasks, tubes, pipettes, &c., used in making dilutions were also previously rigorously sterilised. The medicated culture tubes and bouillon tubes during manipulation were held in such oblique position that all extraneous organisms floating in the atmosphere were excluded. 30 bouillon tubes were thus inoculated, each at an interval of 30 seconds later than the previous. The room temperature averaged 16° C. The inoculated tubes were then removed to a 37° C. incubator for 48 hours, at the end of which time in this case nothing had grown. A second series of dilutions of phenol were tried with like result, the inoculated tubes being allowed to remain in the incubator for 72 hours.

Table I. shows that pure phenol in dilution of 1 in 160 killed all the cholera organisms, but that a dilution of 1 in 165 applied for two and a half minutes allowed growth in 72 hours. It may here be noted that whereas bacillus typhosus and the Klebs-Löffler bacillus, experimented on previously in the same way, always grew within 48 hours if they grew at all, the vibrio choleræ remained in the bouillon apparently dead for 48 hours, after which time growth commenced and was distinctly visible within 72 hours. Further, it may be recorded that working with the above-mentioned slightly acid broth and the dilutions indicated in Table I. no growth appeared in 72 hours, nor did growth appear until a dilution of 1 in 200 was reached. Acid broth was accordingly discarded and an alkaline form (10 cubic centimetres normal NaOH per litre) used instead through which the results of Table I. were obtained. This indicates, I think, that the acidity of the broth inhibited the growth of the cholera organism. In order to eliminate such inhibition alkaline bouillon was used for all further work on vibrio choleræ.

Table II. roughly demonstrates the comparative values of cyllin and phenol in the dilutions indicated, and Table III.

TABLE I.—*Vibrio Choleræ Asiaticæ, 24 Hours Broth Culture at 37° C. Room Temperature from 15° to 18° C. Date, Oct. 20th, 1904.*

Sample.	Dilution.	Time culture exposed to action of disinfectant—minutes.						Sub-cultures.	
		2½	5	7½	10	12½	15	Period of incubation.	Temperature.
Phenol.	1 in 155	–	–	–	–	–	–	72 hours.	37° C.
,,	1 in 160	–	–	–	–	–	–	,,	,,
,,	1 in 165	+	–	–	–	–	–	,,	,,
,,	1 in 170	+	+	+	–	–	–	,,	,,
,,	1 in 175	+	+	+	+	+	+	,,	,,

[1] Journal of State Medicine, January, 1904; Brit. Med. Jour., 1904, vol. ii., p. 15.

TABLE II.—*Vibrio Choleræ Asiaticæ, 24 Hours Broth Culture at 37° C. Room Temperature from 15° to 18° C. Date, Oct. 28th, 1904.*

Sample.	Dilution.	Time culture exposed to action of disinfectant—minutes.						Sub-cultures.	
		2½	5	7½	10	12½	15	Period of incubation.	Temperature.
Cyllin.	1 in 2000	–	–	–	–	–	–	72 hours.	37° C.
,,	1 in 3000	–	–	–	–	–	–	,,	,,
,,	1 in 4000		–	–	–	–	–	,,	,,
,,	1 in 5000	+	+	–	–	–	–	,,	,,
Phenol.	1 in 170	+	+	+	+	–	–	,,	,,

TABLE III.—*Vibrio Choleræ Asiaticæ, 24 Hours Broth Culture at 37° C. Room Temperature from 15° to 18° C. Date, Nov. 4th, 1904.*

Sample.	Dilution.	Time culture exposed to action of disinfectant—minutes.						Sub-cultures.	
		2½	5	7½	10	12½	15	Period of incubation.	Temperature.
Cyllin.	1 in 4500	–	–	–	–	–	–	72 hours.	37° C.
,,	1 in 5000	+	–	–	–	–	–	,,	,,
,,	1 in 5500	+	+	+	–	–	–	,,	,,
,,	1 in 6000	+	+	+	+	+	+	,,	,,
Phenol.	1 in 170	+	+	+	–	–	–	,,	,,

Carbolic acid coefficient, $\frac{5500}{170} = 32.3$

represents the completion of the work by which the values of these bodies as disinfectants have been accurately ascertained. It is here seen that cyllin in dilution of 1 in 5500 is unable to destroy the life of the organism in seven and a half minutes but able to effect its destruction in ten minutes and that pure phenol in dilution of 1 in 170 performs exactly the same work in the same time.

It was found that the slight acidity in the bouillon which seems to inhibit the growth of the cholera organism has no such effect on bacillus dysenteriæ (Flexner). Accordingly in working with this organism the acid bouillon was used throughout.

Table IV. shows a trial series intended to fix the death point (in terms of time and quantity of phenol) of Flexner's organism. Table V. represents a further trial series in

TABLE IV.—*Bacillus Dysenteriæ (Flexner), 24 Hours Broth Culture at 37° C. Room Temperature from 15° to 18° C. Date, Nov. 8th, 1904.*

Sample.	Dilution.	Time culture exposed to action of disinfectant—minutes.						Sub-cultures.	
		2½	5	7½	10	12½	15	Period of incubation.	Temperature.
Phenol.	1 in 75	–	–	–	–	–	–	48 hours.	37° C.
,,	1 in 80	+	+	–	–	–	–	,,	,,
,,	1 in 85	+	+	+	–	–	–	,,	,,
,,	1 in 90	+	+	+	+	+	+	,,	,,
,,	1 in 95	+	+	+	+	+	+	,,	,,

TABLE V.—*Bacillus Dysenteriæ (Flexner), 24 Hours Broth Culture at 37° C. Room Temperature from 15° to 18° C. Date, Nov. 12th, 1904.*

Sample.	Dilution.	Time culture exposed to action of disinfectant—minutes.						Sub-cultures.	
		2½	5	7½	10	12½	15	Period of incubation.	Temperature.
Cyllin.	1 in 700	–	–	–	–	–	–	48 hours.	37° C.
,,	1 in 750	–	–	–	–	–	–	,,	,,
,,	1 in 800	–	–	–	–	–	–	,,	,,
,,	1 in 850	+	+	–	–	–	–	,,	,,
Phenol.	1 in 85	+	+	+	–	–	–	,,	,,

TABLE VI.—*Bacillus Dysenteriæ (Flexner), 24 Hours Broth Culture at 37° C. Room Temperature from 15° to 18° C. Date, Nov. 16th, 1904.*

Sample.	Dilution.	Time culture exposed to action of disinfectant—minutes.						Sub cultures.	
		2½	5	7½	10	12½	15	Period of incubation.	Temperature.
Cyllin.	1 in 750	–	–	–	–	–	–	48 hours.	37° C.
,,	1 in 800	–	–	–	–	–	–	,,	,,
,,	1 in 850	+	–	+	–	–	–	,,	,,
,,	1 in 900	+	+	+	+	+	–	,,	,,
Phenol.	1 in 85	–	+	+	–	–	–	,,	,,

Carbolic acid coefficient, $\frac{850}{85} = 10$.

which cyllin is put in competition with phenol. Table VI. fixes accurately the relative powers of these two disinfectants under the conditions described.

ON THE TREATMENT OF RINGWORM OF THE SCALP BY MEANS OF THE X RAYS.

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IT is now generally recognised that ringworm of the scalp cannot be cured by the application of parasiticides, since no method has yet been discovered by means of which such remedies may be made to penetrate sufficiently deeply into the follicle to destroy the fungus. Hitherto the alternative has been to use methods which will cause sufficient folliculitis to loosen the hairs, so that they fall out, or that they may be easily extracted, bringing the fungus with them. By the employment of strong irritants, such as croton oil, an acute inflammation may be produced with rapid fall of the hair, the cure being complete on the subsidence of the inflammation. But such applications require extreme care and can only be applied to small areas or to isolated hairs by needling, otherwise there is danger of actual destruction of tissue and of the hair papillæ with permanent scarring and loss of hair. For large or multiple patches the usual treatment has been to rub on strong irritants, such as chrysarobin, crude izal, compound citron ointment, oleate of mercury, &c., daily over a long period, so that only a mild folliculitis is produced. This treatment, which is tedious and often painful, must often extend over many months or even years.

In rare instances it has been noticed that while under treatment and without any obvious production of folliculitis the ringworm hairs after a time drop out, leaving smooth bald patches, on which eventually fine downy hairs begin to grow. Here there has apparently been some disturbance of nutrition of the hair. Dr. H. Aldersmith states that he has seen this curious result a few times from treatment chiefly with "boric acid," ether, and spirit lotion, and also with "gas-water," and he remarks that "if this '*artificial alopecia areata*' accidentally comes on during treatment it is a most fortunate thing, as the whole of the places generally follow suit when one undergoes this change and the case gets well. In fact," he says, "my chief experiments during the last few years have been an effort to discover something that will always cause the diseased hairs to fall out from patches of ringworm, for I fully believe this troublesome disease will in time be cured by this method and not by discovery of new parasiticides."[1]

This prophecy had been fulfilled by the application of the x rays in the treatment of ringworm. By this means the hair of the part exposed to the rays may be made to fall, leaving a smooth bald area entirely free from stumps, and when this grows again, after an interval of some weeks, the new hairs are found to be free from ringworm. The fungus has not been killed but has come away with the old hairs and by the time the new hair grows no trace of it is left. Naturally this treatment has been tried almost since the earliest application of the rays as a therapeutic measure but those using it have always been chary in its application for fear of producing burns or permanent baldness. The first trials were made by Freund and by Schiff who used very short exposures so that from 40 to 50 applications were required. Others have been accustomed to treat cases in from 10 to 12 exposures, but even this method has been found too tedious and too uncertain in its results for general use. In recent years means have been devised for measuring the quality and the quantity of the rays. M. Sabouraud, whose brilliant researches have added so much to our knowledge of ringworm and its origin, has availed himself of these methods and has eventually arrived at a very simple and practicable means of applying this remedy, so that the dose necessary to produce depilation without either fear of radio-dermatitis or of permanent baldness may be given at one sitting.

By means of an ingenious device invented by Holzknecht (Holzknecht's pastilles) it is possible to measure approximately the quantity of x rays reaching any spot from an x ray tube at a given distance in a given time. In 1902 Keinbock showed that the amount of x rays necessary to produce fall of the hair from the scalp was from five to seven units H of Holzknecht's scale. It was thus easy to measure the quantity of rays and by the use of the radiochromometer of Benoist one could measure the quality. But the pastilles of Holzknecht were expensive and difficult to obtain and they were of a secret composition. M. Sabouraud in the endeavour to find a substitute hit upon the device of using pastilles made from the paper of the ordinary fluorescent screen. His radiometer[2] is based upon the fact (as pointed out by Villars) that the platino-cyanide of barium of the spectroscopic screen becomes darkened under the action of the x rays and changes colour in proportion with the quantity of the rays received. Given this fact, a standard tint was made corresponding to that which the platino-cyanide of barium takes when the exposure corresponds to five units H of Holzknecht's scale. All that is necessary is to expose the part that is to be depilated at a fixed distance from the tube and to place the pastille midway between the surface and the anticathode of the tube until it acquires the standard tint. The time occupied will vary with the degree of exhaustion of the tube and with the strength of the current, but so long as the pastille has reached, but has not passed, the standard tint the dose received will be that which will cause complete depilation without evil result. The hair begins to fall about 14 days after the application and continues to do so for a few days longer. It begins to grow again in from six to eight weeks and is fully grown at the end of three months.

From my own experience in the use of Sabouraud's pastilles I am fully convinced that they do afford a simple and safe means of accurate dosage. I had previously treated cases both by the method of small repeated doses and also in one or more sittings of greater length in which I endeavoured to measure the dose by means of a milliampèremeter in the secondary circuit and by the use of a regulating tube maintained at a uniform state of exhaustion, but I have found the simple method invented by Sabouraud to be far less troublesome and much more trustworthy. In my earlier experiments a series of cases was treated by means of

[1] Ringworm and Alopecia Areata, fourth edition, 1897, p. 296.
[2] Radiomètre X de Sabouraud et Noiré.

repeated short exposures of 10 minutes,[2] 10 to 14 exposures spread over a period of from three to five weeks, and continued until the hair began to fall. In all cases the result was satisfactory and there was no dermatitis or permanent baldness; the hair in each instance has grown again quite normally over the areas made bald by the rays. It is obvious, however, since we now know that the hair only begins to fall two weeks after the sufficient amount has been received, that the several applications during the two weeks previous to the fall of hair were unnecessary and might have been seriously harmful. The method, too, was tedious and suitable only for single patches or limited areas. At this time there were no means of measuring with accuracy the dosage of the rays; the pastilles of Holzknecht were unobtainable in this country and, moreover, there was a tendency here to deprecate such methods of measurements. Better results were hoped for from the use of a specially constructed milliampèremeter by means of which the actual current being forced through the tubes could be measured. I undertook then another series of cases using a regulating tube and a milliampèremeter. By keeping the tube as nearly as possible at a fixed equivalent spark-length and the current, as registered by the milliampèremeter, at a fixed strength, I hoped to obtain rays of a constant quality and quantity, and it only remained then to fix the time of exposure. By making trials with gradually increasing doses I arrived at the following result—viz., that the least amount of rays necessary to produce depilation might be represented by the following factors:—primary current, five ampères; alternate spark-length of tube, three inches; current passing through tube, four milliampères; distance of anticathode from surface exposed, six inches; and time of exposure, 20 minutes. In this way I was able to produce depilation by one sitting of 20 minutes. But the results were not always quite satisfactory since it was found in practice impossible to keep all these factors constant. Sometimes depilation was incomplete and in one instance a slight radio-dermatitis was produced.

With the use of Sabouraud's pastilles all these difficulties vanished, for experience soon showed that they indicate with remarkable accuracy the quantity and apparently also the quality of the rays emanating from the tube. By preliminary trial of the pastilles I was interested to find that with the ampèrage, spark-length of tube, and milliampèrage given above the time of exposure necessary to obtain the standard tint was exactly 20 minutes, thus corresponding with my own previous estimate. But when the tube was advanced to four or five inches alternate spark length the time occupied was 10 or 12 minutes only. This was in accord with Sabouraud's statement that the higher the tube the more active the rays and consequently the shorter the exposure required; it was, however, opposed to the general view that soft tubes are more therapeutically active than hard tubes. One was naturally led to suppose that the change in the colour of the pastilles was not therefore necessarily a measure of the activity of the rays as regards the effect on the hair papillæ or of their capacity to produce dermatitis. But from my experience in the exposure of scalps by this method I am fully convinced that the change in tint of the pastille does afford an accurate measurement of the amount and quality of the rays. Indeed, I believe it to be at present the only safe means which we have of dosage for therapeutic purposes.[4]

So far I have said little about the actual technique of the treatment. I shall first of all briefly summarise Sabouraud's method and afterwards mention some slight modifications which I have adopted in my own practice. Sabouraud's most recent formula stands as follows: "In order to cure a patch of ringworm by the x rays the patch must be placed at a distance of 15 centimetres from the centre of the tube, while at the same time a pastille of platino-cyanide of barium paper is placed at a distance of eight centimetres. When the pastille has taken the tint B of the radiometer the operation is finished." For the protection of the operator Sabouraud incloses the tube in a metal case lined with ebonite and with an opening towards the patient through which the rays pass. The opening can be fitted with cylinders of various diameters but of uniform length. The area of the scalp to be treated rests in front of the open end of the cylinder. Regulating tubes are used and they are maintained at an equivalent sparking-length of from nine to ten centimetres (four inches). Midway between the scalp and the centre of the tube, in a special opening in the metal case, is placed a platino-cyanide of barium pastille. The current is then passed through the tube until the colour of the pastille matches the standard tint. The exposure is then discontinued. If the patches are few in number they are exposed separately. If they are many and scattered the whole scalp is exposed. This is done by exposing as large a circle as possible, afterwards covering it with a lead shield which exactly fits the area and proceeding over the scalp in the same way until the whole surface has been exposed. The pastille must have behind it a metallic shield which the rays will not penetrate and it must either be wrapped in black paper or the exposure must take place in semi-darkness since the original colour of the pastille is rapidly regained under the influence of daylight.

With my own cases I have been accustomed to use a shield of lead foil with a hole corresponding to the area to be exposed placed on the patient's head. The head is fixed at the proper distance from the tube by means of a simple headrest attached to the chair back. The tube may be covered with a light composition shield in order to protect the operator but the aperture through which the rays pass must be considerably larger than is usual in the shields in general use. The pastille is fixed at three and a half inches from the anticathode (or centre of the tube) and this latter point at seven inches from the scalp. A current of five ampères is passed through the primary circuit (the voltage is 24 units, part of which works the mercury interrupter). The tube is hardened by passing the current through the accessory bulb until it has an alternate spark of four inches. It is found that a current of about 0·3 milliampères is registered by the milliampèremeter in circuit with the tube itself. After ten minutes' exposure the pastille is examined and if not sufficiently dark it is replaced. The exposure usually under these conditions occupies from about 12 to 15 minutes. If the tube becomes softer, which is at once indicated by the galvanometer registering a greater milliampèrage through the tube, the exposure must be longer. With a tube of one inch and a milliampèrage of one milliampère it may even be as long as 35 minutes.[5] But the pastille will indicate exactly when to cease the exposure. After the exposure nothing is done beyond the daily application of a weak ointment of ammoniated mercury with the view to prevent spreading when the hair begins to fall. This occurs with the utmost regularity *during* the third week after the application, beginning usually on the fourteenth day. If, however, the exposure has not been sufficiently long to produce the standard tint in the pastille, depilation will be incomplete, while if the pastille is made too dark by a too long exposure there is danger of subsequent dermatitis. A little practice enables one to recognise easily the proper tint.

In the treatment of cases where the whole scalp needs depilating I at first found great difficulty in adjusting the

FIG. 1.

FIG. 2.

lead shield so that no two areas overlapped and that no untreated patches were left between the exposed areas. I

[2] Most of the applications in this first series of cases were made by Mr. A. T. Marshall (then house surgeon to the Paddington Green Children's Hospital), to whose patience and skill the favourable results were chiefly due.

[4] While at the time of writing this I was of opinion that the readings of the milliampèremeter and the knowledge of the spark-length of the tube afforded a valuable check upon the information derived from the use of the pastille, I have since found that these measurements are not at all to be relied upon. Apart from the degree of exhaustion of the tube and the amount of current actually passing through it there are other uncertain factors which modify considerably the amount and quality of the rays emitted. Two of these factors are possibly: (1) the age of the tube altogether apart from its degree of exhaustion; and (2) the state of the atmospheric pressure or of the degree of moisture of the air (on a wet day the necessary time of exposure with any tube is found to be much shortened). But whatever the other conditions I have always found the colour change of the pastille a perfectly accurate measure of the therapeutic activity of the rays emitted.

[5] Cf. preceding footnote.

have recently overcome this difficulty by using a light frame of very fine wire so as to divide the scalp into four areas—viz., the vertex, two lateral, and the occiput. The framework being adjusted the line of the wires is marked on the scalp with a skin pencil so that their position may be kept constant. It is then easy to surround each area to be exposed by sheets of lead foil folded round the wires. The frame is made simply of three pieces of wire, as in Fig. 1, and is fixed by tying with tapes at the nape and across the forehead, as in Fig. 2, thus dividing the scalp into four segments. Up to the present time I have treated 40 cases by Sabouraud's method, giving in all 100 exposures with the pastilles. In every instance[6] the hair has fallen regularly and completely during the third week, leaving the surface quite bald and free from both diseased and healthy hairs. Many of these scalps have not yet had time to recover their growth of hair but in those in which the defluvium took place more than six weeks ago the hair has begun to grow again and in all the earlier cases (both with and without the pastille) the hair-growth has attained its normal condition. In fact, my results are in accord with Sabouraud's statements that the hair begins to grow again six weeks after the defluvium is complete and that it is fully grown at the end of three months.

Provided then that the proper precautions are taken—(1) that the length of exposure is not allowed to exceed the limit set by the right use of the pastille; (2) that no area or part of any surface is exposed more than once; and (3) that the part exposed is kept at the proper fixed distance from the anticathode of the tube—there is no danger of permanent baldness or injury to the tissues. At the same time care must be taken that the exposure is sufficiently long or the fall of hair will not be complete and many diseased stumps will be left behind, requiring needling or other treatment afterwards. When a part only of the scalp is being treated the remainder must be anointed frequently with a mild parasiticide or the falling hairs from the diseased patch will spread the disease elsewhere; this is explained by the fact that cultures of the fungus can be obtained from the depilated hairs showing that it has not been killed by the action of the rays.

In conclusion, there can be little doubt but that the method of treatment by the x rays is about to supersede all other methods now that, with proper care, the risks of burning or of permanent baldness are no longer to be feared. The period of infectivity from the time that the patient comes under treatment—i.e., from the time of exposure to the completion of the defluvium—is reduced to three or four weeks. Even if the cure be considered to be effected only when the normal growth of hair has taken place the length of time under treatment is not more than three or four months. In the words of Sabouraud, "La teigne se guérissait en deux ans, elle se guérit en trois mois."

Weymouth-street, W.

A CASE OF POLYARTICULAR "QUIET EFFUSION."

BY THOMAS BATTERSBY JOBSON, M.D. DUB., D.P.H. R.C.P.S. LOND.

THE subject of these notes, for which I cannot think of a better heading than the above, was a female, aged 24 years. For over a year she had been under my care for symmetrical effusions of the knee, the wrist, and the first phalangeal joints of the hand, and, as this subject has lately been brought into prominence by Sir William Bennett a short account of the case may be of some interest. With regard to the family history, although there was no history of swellings similar to those from which the patient suffered, there was a well-marked history of rheumatism. Her mother died from rheumatic fever and heart disease and both grandparents suffered from rheumatism. An aunt died from "dropsy." As to the previous history of the patient, as a child she suffered from severe headaches and from epistaxis. The first joint swelling she remembered was when she was nine years old. Her wrists became greatly swollen, so much so that her friends thought she had put them out of joint. The medical attendant ordered them to be wrapped in flannel and called her disease "rheumatism." The joints remained big for a long time and to the best of her recollection this attack occurred during the winter. At the age of 11 years her knees became affected in the same way; they swelled but she suffered no pain and but little inconvenience. Soon after this the first inter-phalangeal joints of the hands became enlarged—all five joints of each hand just as they were last year when the photograph here reproduced was taken. All these swellings occurred in the winter time,

sometimes not coming on till as late as Christmas, but regularly subsiding with the onset of summer, when practically no trace of any enlargement remained. Regularly winter after winter these joint effusions recurred with more or less severity till she became quite accustomed to their yearly appearance and did not consult a medical man. Occasionally joints other than those mentioned above were affected. The elbows were a little swollen on one or two occasions. Once she suffered from pains in the back and her mother told her that she had swellings down the spine. The ankles were never enlarged, even to a slight degree. Until she was 20 years of age the patient felt but little inconvenience from these annual attacks but for the last four years she had been troubled with a considerable amount of stiffness and it was this that, by incapacitating her from work, caused her to seek medical advice. Also for a few years a considerable amount of dyspnœa on exertion had accompanied the joint swellings. During the summer she could walk and run up stairs without getting out of breath. The patient had suffered on and off for years from amenorrhœa, but though she had been treated with benefit for this the joint effusions were not correspondingly improved. Also her menstrual troubles came on independently of the season of the year, whereas the joint affection occurred in the winter only. On the first occasion on which I saw the patient she was hysterical but this was the only time that any tendency to hysteria was noticed by me.

I first saw the patient in the winter of 1900. Her condition at that time was as follows. Both knee-joints were distended with fluid which readily yielded fluctuation. There was no redness, local heat, or tenderness on pressure. Great stiffness, both in the knees and in the back, was complained of. There was no œdema of the legs and the ankle-joints were quite normal. The wrist-joints were enlarged but not nearly so much as the knees. The most striking feature was the symmetrical enlargement of all the first inter-phalangeal joints of both hands. These looked like a row of "white swellings" across the fingers and kept the latter in a state of permanent abduction. The swellings presented the same features as the knee-joints and some idea of their appearance can be obtained from the illustration. The metacarpo-phalangeal joints were perhaps a little enlarged but very slightly. All the other joints in the body were normal. The patient suffered from constipation occasionally and also from indigestion. The urinary system was healthy, the urine containing no albumin or sugar. There was nothing abnormal in the lymphatic system. Except the tendency to hysteria the

[6] The only exceptions were three cases in which, owing to a breakdown in the installation, the exposure had to cease before the pastille had reached the standard tint.

nervous system appeared healthy. The heart was sound and there was no obvious abnormality in the circulatory system, except a slight tendency to anæmia. This, however, was slight, her conjunctivæ were by no means pale, and the general colour of the face was good. The dyspnœa could not be entirely accounted for by anæmia. The specific gravity of the blood as determined by the chloroform-benzol method was from 1050 to 1055 and this, according to the table of Hammerschlag, gives a hæmoglobin percentage of 70—a figure very little below the average for women, the blood of the female being slightly more hydræmic than that of the male.

Treatment was as follows. The swellings could be reduced by pressure but they returned as soon as the pressure was removed. Rest in bed had no effect, so after a week's trial I got the patient up, ordered moderate exercise, massage of the joints, and a mixture of iron and arsenic. In spite of treatment no real improvement in the condition of the joints took place till the spring of 1901.

Whether the swellings are due to a neurosis or whether they are caused by some form of arthritis is an interesting point and, personally, I incline to the former view. The present condition of the patient is similar to that described above. During the last winter, 1904–05, she had no swellings till March when her knees were again attacked.

The interesting points in the case may be recapitulated: the multiplicity of joints affected and their peculiar selection; the annual recurrence of the affection during the winter; the early age at which it commenced before menstruation; and the persistence of the effusions in spite of the menstrual functions being successfully treated.

Ilford.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

NOTE ON A CASE OF ANEURYSM SIMULATING DYSPEPSIA.

BY R. H. CORDNER, M.R.C.S. ENG., L.R.C.P. LOND.

THE patient, a man, aged 35 years, was admitted to the hospital complaining of "indigestion." He stated that for two years he had suffered from pain, usually coming on five or ten minutes after food and lasting for an hour or more. The discomfort was lessened by care in the selection of his diet but pain never quite left him and for some time previously to his admission he had restricted his diet almost entirely to fluids. The patient was a thin, worn man with a drawn, anxious face. The odour of his breath was heavy and his tongue was coated. His teeth were few and bad and he wore a plate of false teeth which he stated were not comfortable. His skin was inelastic and his bowels were constipated. His heart and lungs were sound and there was no history of syphilis.

On examination some pulsation was visible in the epigastric notch and extending over to the left of the middle line. On deep pressure over this area a sense of resistance was made out but no definite tumour. On auscultation over this region a faint blowing murmur was heard, localised to a space of about the size of a five-shilling piece. It was not heard in the iliac arteries and there was no diminution of the pulse wave. An x ray photograph gave no shadow.

Under treatment, for some time the patient seemed to improve but latterly he complained of the increasing pain both in the epigastrium and in the back. These pains rapidly became worse and often took place at times quite unconnected with food, occurring often at night and disturbing his sleep and necessitating the use of morphine. One night nearly three weeks after admission the patient suddenly died.

Necropsy.—A post-mortem examination showed an aneurysm of about the size of a small pear involving the whole of the cœliac axis artery and the anterior wall of the aorta. It lay on the spine between the two crura, close up to the aortic opening in the diaphragm and partly covered by the posterior wall of the stomach. The splenic artery came right out of the wall of the sac, the cavity of which was nearly filled with ante-mortem clot. The wall of the aneurysm had ruptured and the peritoneal cavity was full of blood. The stomach seemed quite healthy.

The curious point about this case was that almost all the symptoms were referred to the digestive organs, which, I think, were little if at all affected. The bad teeth, coated tongue, and constipation all seemed to point in the same direction. The probable explanation seemed to be in the close relation of the sac to the stomach wall. It is conceivable that food by setting up peristaltic contractions would cause pain and irritation in the sac. Bland and unirritating, easily digested foods, such as peptonised milk, would by causing less peristalsis cause less pain. This latter fact would account for the apparent improvement under careful dieting.

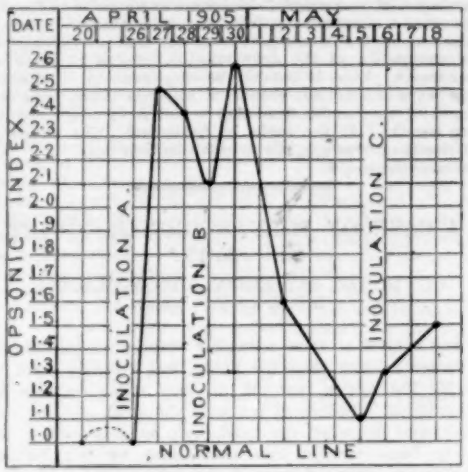
Aldershot.

NOTE ON A CASE OF EMPYEMA TREATED BY PNEUMOCOCCUS VACCINE.

BY THOMAS GLOVER LYON, M.A., M.D. CANTAB.,
PHYSICIAN TO THE CITY OF LONDON HOSPITAL FOR DISEASES OF THE CHEST, VICTORIA PARK.

THE patient was a man, aged 23 years, of temperate habits. On Feb. 22nd, 1905, Mr. J. L. Lawry (then house physician to the case) resected a rib, letting out two and a half pints of blood-stained inodorous pus. The acute symptoms were at once relieved but the subsequent progress of the case proved unsatisfactory. The patient remained of a bad colour and did not gain strength. The discharge became offensive and constant in quantity, about half an ounce daily. A probe could be inserted four inches into the sinus and provoked coughing. Cultures of the discharge showed a pure growth of diplococcus pneumoniæ and it was determined to try the effect of the inoculation treatment after Dr. A. E. Wright's method.[1] This was commenced on April 26th—i.e., nine weeks after the resection of rib. A record of the details of the injections and their effect upon the opsonic index of the patient's blood will be seen recorded upon the accompanying chart.

CHART OF VARIATIONS IN OPSONIC INDEX.



A, Inoculation 100 millions pneumococci. B, Inoculation 200 millions pneumococci. C, Inoculation 100 millions pneumococci.

Immediately after the first injection a remarkable change occurred in the condition of the patient. He rapidly gained strength and weight and the discharge ceased to be offensive. At the end of a fortnight after the first inoculation the wound had healed and the patient left the hospital on May 10th to resume his ten hours' daily work. It may be added that there was no constitutional or local disturbance attending the inoculations. The temperature, respiration,

[1] THE LANCET, August 6th (p. 411) and Oct. 22nd (p. 1138), 1904.

and pulse remained normal and no trouble arose at the seat of inoculation.

The bacteriological investigations, preparations of vaccine, inoculations, and determinations of variation in opsonic index were performed by Dr. G. W. Ross, house physician to the case, at whose suggestion the inoculation treatment had been adopted.

Victoria-square, S.W.

A CASE OF LUDWIG'S ANGINA FOLLOWING INFLUENZA.

BY C. ASHLEY SCOTT LEGGATT, M.D. EDIN.

THE patient, a woman, aged 37 years, was first seen on Feb. 21st. She was suffering from tonsillitis of the follicular type usually associated with influenza and of moderate severity. The case ran a normal course and the patient was practically well on the 27th. On March 15th she again sent for me as she had a swelling on the right side of the neck which she thought was due to mumps. She said that she had been fairly well during the intervening fortnight but had not felt quite herself, and first felt pain in the glands of the right side of the neck at a dinner party on the night of the 13th. On the next morning there was a swelling under the right side of the lower jaw but when seen by me on the 15th there was no swelling of the parotid nor was there anything to be seen inside the throat though the patient complained of great pain in swallowing. The temperature was normal but the pulse was rather rapid from the first. During the next few days the patient suffered a great deal of pain but remained in much the same condition and on the 25th Mr. E. Venning saw her with me and advised the removal of a septic molar tooth thinking that it might be the source of mischief. No improvement followed, the pulse increasing in frequency, and the temperature beginning to rise every afternoon to 100° or 101° F., so on the 29th Mr. C. A. Ballance saw the case with me. During this day the pain had been severe and the pulse was 140 and at times slightly irregular, and immediate operation was decided upon. One incision was carried along the anterior border of the right sterno-mastoid and another shorter one was made at the posterior border of the muscle. Scarcely any pus was found but all the cellular tissue was grey-black in colour and gangrenous. The glands, too, along the internal jugular vein were in a state of infective inflammation; some of these were removed. It was then discovered that a coagulum occupied the interior of the jugular vein from the base of the skull to the level of the thyroid cartilage. The vein was divided between two ligatures and the proximal part containing the coagulum was fixed to the skin margin. The patient made a rapid convalescence and in three weeks was able to leave for the seaside.

It is difficult to say whether the tonsil or the carious tooth was the source of the infection of the spreading cellulitis of the neck. Carious teeth or caries of the alveolar process are a well-recognised avenue through which infection of the type of Ludwig's angina may arise in the cellular tissue of the neck. On the other hand, there is no reason why such an infection may not spread from an inflamed tonsil, a condition which has been known to occur in certain malignant scarlatinal cases. In this case the septic mischief in the tooth had been going on for years and probably the supervention of influenzal tonsillitis on the top of this was the immediate cause of the cellulitis. A point of great interest in the case is the thrombosis of the jugular vein which is of great rarity in cases of septic cellulitis of the neck. To this cause may be ascribed the slow onset of symptoms and the absence of severe constitutional symptoms. The blocking of the venous channel was nature's effort to localise the inflammatory process.

Walton-place, S.W.

THE DENTISTS ACT.—At Crediton, Devonshire, on June 14th, Mr. William Baker of that town was summoned for an offence under the Dentists Act of 1878. Evidence showed that the defendant had a brass plate at his house inscribed "W. Baker, surgeon dentist, Limited." The defendant stated that he was a doctor of dental surgery of Chicago, America, and that he had never represented himself to be a registered dentist under the Act of 1878. He was fined £5 and costs. The prosecution was instituted by the British Dental Association.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum allorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv., Procemium.

KING'S COLLEGE HOSPITAL.

A CASE OF ABSCESS OF THE LUNG FOLLOWING GASTRIC ULCER; RECOVERY.

(Under the care of Sir HUGH R. BEEVOR.)

FOR the notes of the case we are indebted to Mr. H. R. Allingham, senior house physician.

The patient, a female, aged 20 years, a domestic servant, had suffered from anæmia with much dyspepsia and constipation during the past two years, occasionally vomiting. On Feb. 24th, 1905, she sought advice for pain in the left anterior axillary line at about the ninth rib. Physical examination of the chest and the abdomen was negative and a mixture containing bismuth was prescribed. On the evening of the 26th, after a full and injudicious meal, the patient was seized with very severe pain in the abdomen, screaming out; she had the pulse of collapse and cold extremities. Morphine was given in repeated doses. Pain was localised to the splenic region with general abdominal tenderness. Next morning the pulse had recovered much, her temperature was 100° F., the abdomen was not distended, but there was no apparent movement on descent of the diaphragm. There were marked hypogastric tenderness and an appearance of menses. During the next two days her temperature rose slightly and leucocytosis was 14,000 per cubic millimetre, and Mr. F. F. Burghard was called in consultation. It was considered that the patient needed watching in hospital and she was admitted into King's College Hospital on March 2nd, 1905.

On admission the patient looked very ill, with a drawn and anxious face. Her temperature was 99·2° and her pulse was 120, of small volume. She complained of severe pain in the abdomen, mostly referred to the left iliac region. On examination the abdomen was slightly but uniformly distended, there was rigidity of the muscles of the abdominal wall, and the abdomen did not move on respiration. There was great tenderness, more marked in the left iliac region. There were slight dulness in each flank, and absence of liver dulness. Some vomiting occurred and constipation was absolute (the bowels not having acted for some days), in spite of the free use of enemata. Immediate operation was considered inadvisable on account of the length of time that had elapsed since the onset of the symptoms and the absence of symptoms localising the suppuration. The abdominal signs continued but did not increase in severity and the distension did not become greater. The pain was as before and the pyrexia ranged from 100° to 101°. By March 6th thoracic signs became evident; dulness was present on the left side from the base of the lung to the fourth rib in the axillary line and over the dull area there was loss of breath sounds, and vocal resonance and tactile fremitus. A blood count now showed a leucocytosis of 18,000. On the 9th exploration of the left chest withdrew two ounces of blood-stained serous fluid; the signs in the chest became more marked and the abdominal signs less evident, though pain continued in the abdomen. The apex beat was throughout in the fourth space, just internal to the nipple line. After the 11th the pyrexia steadily rose day by day with a feeble, rapid pulse (112), the respirations being 36, until on the 16th the temperature reached 104·4°, accompanied by a leucocytosis of 32,600 to the cubic millimetre. The pain became severe and was localised in the left side of the chest and the left shoulder. The physical signs were as before except that the mobility of the abdomen was improved. There was no cough or sputum at this stage. A second exploration withdrew a small quantity of blood-stained serous fluid containing a few cells and sterile on culture. An x ray photograph showed a slight depression and flattening of the left dome of the diaphragm and the area above the diaphragm

showed a little opacity on the left side, as of a pleural effusion. The patient became drowsy and apathetic, only occasionally crying out with pain. By the 18th over the dull area tubular breathing and bronchophony were present from the third to the eighth space on the left side, and below the eighth interspace there were signs of fluid effusion as before. During the next few days her general condition became worse, a chronic deafness became more complete, and the pain in the left shoulder was severe, her temperature varying between 102° and 104·4°. Cough appeared on the evening of March 22nd and became frequent and distressing, but there was no expectoration. The pulse was feeble (140) and the respirations were 40. At last, on March 23rd, in the early morning, the patient suddenly brought up, by combined coughing and vomiting, over a pint of fluid. This was chiefly foul pus, with some stomach contents intermixed. At the same time the temperature fell from 102° to 97·4° and the patient was collapsed, with cold sweat, thready pulse (132), and respirations 52 to the minute. Stimulants were freely used and five minims of solution of strychnine were injected hypodermically every four hours. During the next few days the patient continued to cough up foul pus and this did not end for nearly eight days after the rupture of the abscess. The cough was frequent and distressing and great effort produced only slight expectoration. Pain on being moved was acute. On the 25th (two days after rupture of the abscess) signs of pneumonic consolidation appeared at the right base, with pleural frictions, and great pain was felt in the right side. Her general condition was very bad and stimulants were freely administered, combined henceforth with large doses of tincture of perchloride of iron. In view of apparent inability to cough up the pus, &c., emesis was induced with 30 grains of sulphate of zinc, but the result was not satisfactory. By the 29th in very slow stages the patient's condition had improved; the pyrexia, though very irregular, was less; and the condition of the lungs had improved, the right side resolving first. Cough continued very troublesome but expectoration became gradually merely bronchial mucus. Improvement slowly but steadily followed, only interrupted by a thrombosis of the left femoral vein which showed itself in pain and slight swelling of the limb and engorgement of the superficial veins of the leg and the thigh. The temperature did not become normal until so late as May 1st and it has continued so. At first during convalescence the heart's apex moved to the left and there were no normal breath sounds in the left lower lobe. The progress to normal sounds and rapidity of recovery of expansion of the left lung were more rapid than in cases of ordinary pleurisy. The measurement of the left chest is one and a quarter inches less than the right chest. The patient left the hospital practically quite well.

Remarks by Sir HUGH BEEVOR.—In the early days of this illness the symptoms pointed to a subdiaphragmatic abscess as much as a lung abscess, the diaphragm being evidently the site of inflammation. When the Roentgen rays localised the extension of the suppuration as being above the diaphragm any operation was precluded by the presence of serous effusion in the left pleura. In such conditions pneumothorax might have been expected to arise and cause more evil than any benefit to be gained by opening the abscess with such a complication added. But the chief interest in this case lies in the speed and thoroughness of recovery where the abscess was long in penetrating to a bronchus, where secondary pneumonia developed in the other lung, and where the patient was of poor physique. In the face of unsatisfactory results reported in many cases operated upon for pulmonary abscess the experience of this patient seems worthy of notice.

MIDDLESEX COUNTY LUNATIC ASYLUM.—On June 3rd Sir C. Francis Cory-Wright, Bart., D.L., formally opened the new asylum at Napsbury, near St. Albans, Herts. The buildings, which will accommodate about 1200, have been erected under the direction of the architect, Mr. Rowland Plumbe, and it is hoped that the needs of the county will be met for some years. The buildings have, however, been so designed as to allow of future development. It is almost needless to say that great attention has been paid to the sanitary arrangements of the asylum and that everything which could add to the well-being and comfort of the patients has been carefully thought out and supplied.

Medical Societies.

EDINBURGH MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases.—The Onset of Fear and the Onset of Pain in Cardiac Disturbance.—Acute Cerebro-spinal Fever and Intoxication.

A MEETING of this society was held on June 7th, Professor JOHN CHIENE, the President, being in the chair.

Mr. ALEXANDER MILES showed four patients after operation for Acute Generalised Peritonitis resulting from Gangrenous Appendicitis. The patients were boys, aged respectively 9, 13, 16, and 16 years, and were all in the wards of Leith Hospital at the same time during March and April of this year. The cases illustrated the benefit which resulted from washing out the abdominal cavity with saline solution in general peritonitis. Mr. Miles had operated on 45 cases of acute generalised peritonitis associated with gangrenous appendicitis; of these 25 ended fatally and 20 recovered and in all the latter the abdomen had been washed out. Mr. Miles also exhibited a Spleen removed for Traumatic Rupture. The man is now following his usual occupation.

Mr. F. M. CAIRD showed a man after Trephining for Extradural Hæmorrhage. The patient had been found lying unconscious at the foot of a stair. There was only a slight bleeding from the ear and the case seemed to be one of cerebral laceration. A subnormal temperature lasted for three days and suggested a suppurative condition of the brain. The size of the pupils varied from day to day. Seven days after the accident the muscles of the face on the left side commenced to twitch and this soon extended to the arm and leg of the same side. On trephining over the fissure of Rolando on the right side a large, hard, cake-like blood clot, weighing four ounces, was found. Consciousness was regained almost immediately after the operation and though the ability to speak was at first poor it soon regained the normal amount. The patient recollected everything that had happened up to the moment of entering the passage leading to the stairs.

Mr. ALEXIS THOMSON showed a man who had suffered from Tropical Abscess in the Right Lobe of the Liver which had been treated by syphon drainage after the method of Sir Patrick Manson. The exploring needle having shown the presence of pus a large trocar was passed into the cavity in the anterior axillary line and at the seventh interspace and the pus was allowed to escape. A large catheter was then introduced and fixed in, while a tube attached dipped below into a vessel containing boric solution. This form of syphon drainage was established for three weeks, allowing the escape of much thick brown pus. The result was absolutely satisfactory.

Dr. GEORGE A. GIBSON showed a male patient suffering from Ophthalmoplegia Externa et Interna. The affection commenced five years previously in a slight drooping of the right eyelid and had progressively become worse. There was absolutely no movement in the right eye and in the left the superior oblique muscle had alone escaped. There was no alteration in the field of vision; all the cutaneous reflexes were exaggerated. Such cases had been described as superior tabes dorsalis. The disease consisted in a specific affection of the nuclei controlling the nerves of the eyeball.

Dr. GEORGE R. WILSON read a paper entitled "The Onset of Fear and the Onset of Pain in Cardiac Disturbance." The fears referred to were paroxysmal and transient and for the most part nocturnal—such as fear of suicide, fear of disgrace, fear of poisoning someone, fear of mis-signing a cheque, and so on. These symptoms were common in patients suffering from abuse of alcohol and tobacco. The occasion of the dread was probably a transient bradycardia. None of these dreads were of long enough duration to constitute an obsession. With these might be compared the night-terrors of children, nightmare, and the sinking sensation, and the referred pains of cardiac disease. Head's explanation of referred pains was convincing so far as it related to the sympathetic and dorsal mechanism. The primary symptom in all the above experiences was a general and more or less acute sense of uneasiness. Then followed a quick conscious effort at localisation. Both these phases and the subsequent result—a pain or a fear—should be discussed

not only as mental processes but as a continuous nerve movement and as dependent upon nerve distribution. With regard to such symptoms as had been mentioned it might be safely inferred that there was a cortical mechanism for them having well-defined connexions with the bulbar, sympathetic, and spinal mechanisms. There could be no doubt, for instance, that in the normal man there was a well-established mechanism to represent a sense of danger and that it was closely associated with the mechanism of general uneasiness which was stimulated so frequently in bodily diseases. In certain cases the route of the impulses from the cardiac plexus would be through the sympathetic fibres to the dorsal segment, thence to the medulla, thence to the cortex. From the mechanism for general uneasiness the route would be in some cases back to an overstimulated spinal segment where it was intercepted and sent back again to the cortical mechanism representing, say, the left arm, and there occurred in the intelligence a "referred pain" in the arm. In other cases a similar impulse from the cardiac plexus, after leaving the mechanism of general uneasiness, was reflected, not to a hyperæsthetic dorsal, but to a hyperæsthetic cortical mechanism and was again reflected to the mechanism of judgment and there occurred in the intelligence a "referred fear." (The term "irrelevant" might be preferable.) In both groups of cases the perversion of the impulse had been determined by a "tender" mechanism—in the one case by a dorsal mechanism which represented a "tender" surface area and in the other case by a cortical mechanism which represented a "tender" place in the mind; for, in the cases of transient fear before mentioned, the fear referred to some subject of almost constant anxiety. It was not suggested that cardiac disturbance was always the prime factor in these cases of transient terror.—Dr. T. S. CLOUSTON said that all heart pain was not attended with fear; some emotional instability was also required. When both occurred together sudden spasmodic action might result. The brain might be the originator of the heart pain. He called attention to the intimate relationship between melancholia and vascular disease. The cerebral cells might be poisoned and so might originate the heart pain.—Dr. GIBSON said that in his experience fear was generally absent in cases of heart disease.—Dr. JAMES RITCHIE said that he could recall many cases of fear, morbid anxiety, &c., in which there was no affection of the heart whatever.

Dr. ALEXANDER JAMES read a paper entitled, "Notes of Cases of Acute Cerebro-spinal Fever and Intoxication occurring recently in Edinburgh and in the Surrounding District Clinically Resembling Forms of Epidemic Cerebro-spinal Meningitis." He said that during the past 15 years he had seen serious and often fatal cases of cerebro-spinal intoxication and fever in which the ordinary causes of such symptoms could be apparently excluded and for the explanation of which some less ordinary infective or toxic agency had to be thought of. Within the past few months he had seen in the Royal Infirmary of Edinburgh and elsewhere a much larger proportion of such cases than usual. He then proceeded to sketch out the most prominent features in a few of the more interesting cases which had come under his observation. One of the patients was a boy, aged 13 years, who was found lying under a tree in a state of unconsciousness from which he could not be roused. He was pale, the pupils were dilated, the pulse was 80 per minute and feeble, his temperature was normal, and there was no paralysis. He had complained of headache previously. A few hours later twitchings of the facial muscles commenced with retraction of the head and death soon supervened. The post-mortem examination revealed merely some hyperæmia of the grey matter of the pons and medulla; all the other organs were quite healthy. Another patient was a male, aged 18 years, who previously to his admission to the Royal Infirmary had suffered from broncho- or catarrhal pneumonia for 14 days. There was also a suspicion that he suffered from typhoid fever but no Widal reaction was obtainable. Examination of the sputum showed many cocci and diplococci but no typical pneumococci. On admission he could hardly be roused to answer questions; his pupils were equal, slightly dilated, and reacted to light, though slowly. On the day after his admission his temperature was 101·6° F. and his pulse and respiration were respectively 110 and 36 per minute. Attacks resembling the opisthotonos of tetanus now showed themselves about every 20 minutes, with intervals of incomplete relaxation. In these intervals he complained of great pain in the head, neck, and epigastrium, due probably to cramp. Kernig's sign was markedly present; tickling the soles of the feet produced active drawing up of the legs, though knee-jerks could not be elicited. Priapism was present. Lumbar puncture was performed and 15 cubic centimetres of cerebro-spinal fluid escaped readily, indicating high tension. Marked improvement followed, the spasmodic attacks ceased, the patient's mental condition became clearer, and he was able to leave the hospital five weeks after his admission. The fluid obtained by puncture was quite clear and contained no organisms. Another patient was a woman, aged 24 years, who, when admitted to the infirmary, complained of great headache and was only semi-conscious; her temperature was 101·4°, her pulse rate was 124, and her respiration rate was 24. Both eyes were slightly prominent, with slight ptosis on the left side. Kernig's sign was absent, knee-jerks were present, and the pupils were equal and active. Lumbar puncture was performed and 22 cubic centimetres of fluid spurted out with great relief to the patient's symptoms. She made an excellent recovery. The fluid showed no excess of cells and no organisms. Another patient was a boy, aged eight years, who suddenly fell to the ground, complained of great pain on the right side of his head, and dragged his left leg on walking. He became dazed and partly unconscious and seemed paretic on the whole of the left side; his pupils were dilated and only slightly reacted to light. The plantar reflex was more marked on the left side than on the right and knee-jerks were absent on both sides. Four days after his seizure lumbar puncture was performed and nine cubic centimetres of fluid were withdrawn. From this time he gradually improved. The fluid contained staphylococcus albus and either staphylococcus aureus or citreus. Two forms of bacilli were also present, the one resembling pseudo-diphtheria organisms and the other being a short bacillus with rounded ends; no diplococci were present.

DERMATOLOGICAL SOCIETY OF LONDON.—A meeting of this society was held on June 14th, Dr. J. J. Pringle being in the chair.—Dr. H. Radcliffe Crocker showed a case for diagnosis of a Follicular Eruption occupying the thighs and knees of a woman aged 51 years. The condition had persisted for six months. Over the knees the skin was much thickened, reddened, and scaly, and this condition, together with the follicular eruption on the legs and thighs, inclined Dr. Crocker to suggest the diagnosis of pityriasis rubra pilaris.—Dr. Pringle considered the case to be more probably lichen planus.—No other suggestions were offered.—Dr. Pringle showed another case for diagnosis of a Follicular Eruption covering the back and front of the trunk of a girl, aged 20 years, who gave the history of the eruption having lasted for five years; it was increasing in extent and was itchy. There was no evidence of seborrhœa or of excessive sweating.—Dr. Crocker, however, considered that it might nevertheless be of the nature of a sweat eruption.—Dr. J. H. Sequeira showed a case of Keratosis Follicularis (Darier's disease) of remarkable extent and severity in a woman who claimed to be of Welsh nationality. The eruption was particularly copious and pronounced upon the upper and inner surface of the thighs, upon the flexor aspect of the forearms and arms, and upon the neck and the abdomen. She had had the disease for from eight to ten years. A section from the affected skin was shown and the characteristic dilatation of the orifice of the pilo-sebaceous follicles by plugs of horny material was well marked. This case being only the second example of this rare disease which had been recorded in this country excited a great deal of interest.—Dr. Arthur Whitfield showed a case of Myoma Cutis in a man about 40 years of age. Numerous small tumours were grouped, somewhat like herpes, in the course of the cutaneous division of the right supra-orbital nerve. They were entirely painless, were found only in the position named, and had persisted for five years. It was a moot point whether they had appeared in the site of a previous eruption of herpes, a supposition supported by a history of original "blisters" in this position and by the very anomalous arrangement of the lesions. A section from one of the tumours was shown at the meeting and demonstrated that the tumour was undoubtedly composed of unstriped muscular tissue.—Dr. E. G. Graham Little also showed a case of Myoma Cutis in a woman, aged 45 years,

who had small tumours of the size of a pea upon the neck where they had appeared in the first instance, upon the left arm and forearm, and upon the back of the shoulder. She had noticed the earliest of these about six months ago. They were perfectly painless and she suffered no inconvenience whatever from them, but they appeared to be getting larger and some fresh ones were still coming out. A microscopical section from a tumour on the neck showed characteristic muscle fibres in the deeper parts of the corium, massed together and constituting the greater part of the swelling.—Mr. George Pernet showed a microscopical specimen of Streptothrix which had been derived from a patch of Actinomycosis of the Skin from a case under the care of Dr. Crocker who explained that the patient had been an engineer who had possibly contracted the disease in West Africa where he had also contracted malaria.

MEDICO-LEGAL SOCIETY.—The terminal meeting for the session of this society was held on June 6th, Dr. F. J. Smith being in the chair.—Dr. W. Wynn Westcott read a communication on Suicide. Inquest juries only found about 1 per cent. of suicides guilty of *felo de se*; cases where no evidence was obtained as to the mental condition were regarded as temporarily insane. Patients were often prematurely discharged from asylums and the exigencies of home life led them to slay themselves. Alcoholism was the most common predisposing cause, then the presence of disease. An additional grievance or an overmastering passion was usually the proximate cause of the fatal act. The relation of the sexes was very consistent, three men to every woman. The rate of suicide per 1,000,000 of the population was constantly increasing; thus it was in 1861, 66; in 1881, 77; in 1891, 85; in 1901, 96; and in 1903, 105.—Dr. F. S. Toogood had never witnessed the fear of death in patients dying in the Lewisham Infirmary. Alcoholism, love affairs in the case of women, and the delirium of acute disease were responsible for most attempts at suicide.—Dr. S. B. Atkinson instanced Sir Samuel Romilly as a case where an effective blood-letting led to speedy regret at the act of self-slaughter.—Dr. James Scott stated that few of those who came under him in Brixton Gaol for attempting to commit suicide could be regarded as insane. He had found that fewest of these cases were entered in February and most in July or August.—Mr. A. E. C. Franklin of the Federated Malay States instanced cases where pity, *ennui*, and even a desire to annoy had led Tamils and Chinese respectively to slay themselves.—Miss E. L. C. Appel, M.B., then read a paper on Feeling and Emotion, their Bearing upon Crime and Insanity. Self-responsibility was a purely human characteristic; to regard criminals as irresponsible robbed them of their manhood. Sensation was the function of the central nervous system; feeling of the sympathetic system. In man evolution especially concerned nerve structures which were influenced by the environment; hence remedial homes of detention were preferable to prisons for criminals. Further, in states of nervous fatigue, ill-health, and even sleep, acts might be performed which would be reprehensible at other times; the actors were not insane but were acting subconsciously. Attendants at public institutions should be chosen with great care, with a view both to watch the behaviour and to influence those committed to their charge.—Dr. Albert Wilson held the view that there was no such thing as free will; a man's impulses and desires were summed up by his intellect and called his will.—Mrs. Saunders Jacobs, B.A., distinguished the semi-conscious from the subconscious state; the brute creation at times manifested a sense of responsibility. Sensation was at the root of every faculty of the mind.—Miss Appel, in reply, said that our wills were bound by our past and to that extent were not free: we should try to improve the mental machine as it was being made in the young.

SAMARITAN FREE HOSPITAL FOR WOMEN, LONDON.—The new out-patients' department and nurses' bedrooms at this hospital were opened on June 14th by Lord Leigh, the president of the hospital, in the absence of Lord Portman, who was to have done so but who had been called to Windsor. It was now desired to instal the electric light and to erect a modern theatre to complete the hospital and a special appeal fund has been organised which will be glad to receive subscriptions. Communications should be addressed to Miss D. Royde-Smith, secretary of the Special Appeal Fund, at the hospital, Marylebone-road, N.W.

Reviews and Notices of Books.

Modern Methods of Treatment: The Open-Air Treatment of Pulmonary Tuberculosis. By F. W. BURTON-FANNING, M.D. Cantab., Physician to the Norfolk and Norwich Hospital; Honorary Visiting Physician to the Kelling Open-Air Sanatorium. London, Paris, New York, and Melbourne: Cassell and Co., Limited. 1905. Pp. 176. Price 5*s*.

THE benefits of the open-air treatment are now generally recognised. Although there are certain advantages, both from a curative and an educational point of view, to be obtained by residence in a regularly constituted sanatorium, nevertheless the treatment can be perfectly well carried out in private houses. In agreement with some other authorities Dr. Burton-Fanning maintains that the conditions which are absolutely necessary for the satisfactory adoption of the open-air system are to be found almost everywhere outside our cities. We regard this statement as rather too sweeping. The site of the building in which the treatment is to be carried out has to be selected carefully in regard to shelter from prevalent winds and a dry soil is obviously better than a moist one.

The early chapters of this book are occupied with certain etiological and clinical considerations and allusion is made to the differences in tractability to treatment which distinguish the various forms and stages of pulmonary tuberculosis. The importance of the early recognition of the disease is duly insisted on, for the success of the treatment is more dependent on the case being taken in hand at the very commencement of the malady than on any other one point. The remarks on this subject are well worthy of perusal. If there are found the assemblage of signs and progression of symptoms characteristic of pulmonary tuberculosis no difficulty will be experienced in arriving at a diagnosis, but certain symptoms may precede the physical signs or the latter may be anomalous and then grave doubts may arise which will be the cause of considerable anxiety to the practitioner.

In the chapters devoted to a consideration of the details of the open-air treatment the routine generally adopted in the case of a patient who is just embarking on such a course is first described. One of the principal points discussed is, Should the patient be wholly confined to bed or should he be allowed up for the whole or part of the day in the bedroom or out of doors? The answer to this question is chiefly supplied by the observation of the patient's temperature, but other points have also to be observed, more especially the rate of the pulse and the condition of the digestive system. Dr. Burton-Fanning's observations on these and other matters afford much valuable information and will greatly help those practitioners who have had no practical experience of sanatorium life. The treatment of the convalescent patient is equally well discussed and the daily routine is carefully laid down. The chapter on diet in the treatment of pulmonary tuberculosis is also a valuable one. Dr. Burton-Fanning objects to the "over-feeding" which was once in vogue. In this opposition we believe he is right. Success in sanatorium treatment depends largely on "individualisation"—that is to say, each patient must be studied separately and "is a law unto himself." Particularly is this the case in regard to diet; we agree with the author when he says: "Our object in the dietetic treatment of pulmonary tuberculosis is to bring the patient's nutrition up to a standard which is judged to be consistent with the highest level of general health and at the same time to improve digestion and assimilation." This can only be done by placing each patient on such a diet as he can properly digest and assimilate.

Another matter that has been too much lost sight of in the past is rightly emphasised in this work—namely, that the

majority of the inmates of a sanatorium require life-long care and assistance if their recoveries are to be maintained. This is a subject that naturally bristles with difficulties and is at present receiving a good deal of public attention.

Dr. Burton-Fanning adduces some arguments in support of the contention that not only are elaborate buildings unnecessary but that they provide less efficient treatment than more primitive forms of accommodation. There is much to be said in favour of this suggestion when the patients to be dealt with are limited in number, but when upwards of a hundred have to be treated in the same sanatorium then we believe that the administration will be greatly aided by adopting the block or pavilion system.

A System of Practical Surgery. By Professor E. VON BERGMANN, M.D., of Berlin; Professor P. VON BRUNS, M.D., of Tübingen; and Professor J. VON MIKULICZ of Breslau. Translated from the German. Edited by WILLIAM T. BULL, M.D., Professor of Surgery, College of Physicians and Surgeons, New York. London: Williams and Norgate. 1905. Five volumes. With 1976 illustrations in the text and 102 full-page plates in colours and monochrome. Pp. 4174. Price: extra cloth, £6 6*s.*; half leather, £7 7*s.*; half morocco, £8 8*s.*

THE mere statement of the number of the pages of this system of surgery will of itself suffice to show the elaborate nature of the work. More than 4000 pages of text and more than 2000 illustrations should surely be sufficient for the thorough description of the practice of surgery. The work in its German dress is well known to medical science throughout the world and it was therefore with no small degree of interest and curiosity that we turned to this presentment of the treatise. This is not merely a translation from the German; the work has been edited by Dr. Bull after the translation had been made from the revised second German edition, and the translators are all men of recognised position in surgery and they have added descriptions of methods of practice preferred by English or American surgeons, so that we have the benefit of these additions to the original work. The editor has done his work so well that the new matter has been thoroughly incorporated with the old and the two can rarely be distinguished the one from the other. For this reason we shall not attempt to discriminate between the original and the added matter in the criticisms which we may have to make.

First, as to the translation; it has been well executed so that it is generally difficult for the reader to recognise that he is reading a translation. There is, however, one matter with regard to which we must take exception. In many sciences, although the corpus of the science is identical in all the countries of the civilised world, the names in use in that science may differ considerably, and to this general rule the science of surgery is no exception. Many terms and expressions which are to be met with in surgical treatises in German are almost meaningless in the ears of an English surgeon unless he has an acquaintance with German surgical literature. We will give some examples of what we mean. Fig. 124 is entitled "Struma in Graves' Disease." What will most English-speaking surgeons understand by this? They will not know that in German "struma" is used for enlarged thyroid, seeing that the word is never thus used in English. Again: "If in a double cleft the union has occurred with a short philtrum, a marked shortening in the centre of the lip is the result." To the average reader what idea will the word "philtrum" give? Deficiencies of translation such as these are blemishes which could easily have been removed by the exercise of a little care. There are many real slips which mar the pages of the work. For instance: "The most important thing about this method [taxis] is that it should not be fractured too energetically." Then we find the expression "labium majora." Again, "If the partitions between the two halves of the allantois fails a double bladder will be the result." Here the meaning may be guessed but the wording is at least curious. We are also informed that "unlike tuberculosis syphilis of the testicle is usually situated in the testis." We do not dispute this fact at all but its statement seems somewhat unnecessary. Of course, the real meaning is that tubercle attacks the epididymis while syphilis attacks the body of the testis. We have quoted these errors not to find fault with the work itself, which is deserving of the greatest praise, but merely to point out that a little extra revision would not have been misplaced.

We will now examine a few of the statements of the book with which we do not agree. In the description of the treatment of enlarged prostate no mention is made of the modern operation of the enucleation of the prostate through a suprapubic cystotomy wound. This is an important omission, for in this country at least this method of treatment is rapidly replacing all others. The origin of varicocele is still referred to the fact that the left spermatic vein enters the left renal vein at a right angle; and the author somewhat mysteriously adds "the pressure in the vena cava is distinctly less than that in the left inguinal vein," though what this has to do with the matter is entirely beyond our comprehension. Two other reasons are also given for the greater frequency of left varicocele: the fact that the left testis hangs lower than the right and that the left cremaster muscle is more stretched and less powerful than the right. These are very inadequate causes. The main reason is the pressure of a distended sigmoid flexure on the left spermatic vein.

In the section on the Diseases of the Mammary Gland we find the following sentence: "Kocher's report of eight cases in which the cancerous nodules of the breast were only partially removed shows how careful one should be in judging of the value of these statistics; six of these showed no signs of recurrence after three years." It is possible that this is only an error of the translator and that the author wrote that only the cancerous nodules were removed. As it reads now it can only mean that portions of the malignant growth were left behind, and yet recurrence took place in only 25 per cent. of the cases.

With a notice of one very striking passage we will conclude. In the account of the treatment of cleft palate we read, "although Wolff has shown that the operation may be performed still earlier, even in the first month of fœtal life....." We must acknowledge that we have never heard of the operation being performed at this early age and we should be glad to receive information on two or three points. In the first place, how is the diagnosis of a cleft palate made within the first month of fœtal life? secondly, is the operation done suprapubically or per vaginam? and thirdly, what is the prognosis for the mother and child? We may also mention that we were under the impression that the union of the two halves of the palate did not commence till the eighth week of fœtal life and therefore an operation for the closure of the cleft within the first month might often be supererogatory. A consideration of the size of the embryo at this early age does but serve to enhance our admiration of the skill of the operator. In the words of Goldsmith, slightly modified, let us add: "And when he next doth perform this operation may we be there to see." We would not have it thought that the passages which we have criticised are typical of the whole work. With the treatise generally we are well content and we regard it as a valuable exposition of modern surgery.

The main characteristics of the System are the fulness with which the subjects are treated and the wealth of illustrations. Many of these are in colours and are very successful examples of colour-printing. The vast majority

of the articles are very good but we desire especially to praise those on Injuries of the Head and Diseases of the Breast.

The Preparation and After-Treatment of Section Cases. By W. J. STEWART MCKAY, M.B., M.Ch., B.Sc. Sydney, Senior Surgeon to the Lewisham Hospital for Women and Children, Sydney. With 10 plates and 134 drawings. London: Baillière, Tindall, and Cox. 1905. Royal 8vo, pp. 672. Price 15*s.* net.

To every surgeon the preparation and after-treatment of his abdominal cases must be a matter of the utmost importance, but whether the subject is so important as to warrant a volume of 672 pages being written about it may well be questioned. We cannot but admire the painstaking care with which Dr. McKay has compiled this book and it undoubtedly contains a great deal of most valuable information. The author, as he truly says in his preface, has set down anything and everything that will be a help to the young surgeon. The result is, as he himself admits, that the work has assumed undue proportions, yet there is but little we would wish to see omitted. Acting on the advice of the late Mr. Lawson Tait the author made himself acquainted with the work done in many of the clinics on the continent and he has embodied the knowledge thus gained in his work. The first 19 chapters are devoted to an account of the preparation of the patient, the sterilisation of instruments and dressings, the furnishing of theatres, and other details of antisepsis and asepsis. The next ten chapters are concerned with the after-treatment of the patients and the conclusions to be drawn from observations on the pulse, temperature, tongue, and so on, while the rest of the work deals with the various complications which may follow an abdominal section and their treatment.

In the chapter in which the fitting out of an operating room is considered stress is laid on the many advantages of moveable wash-hand basins over fixed ones. This is really an important point and even at the present time modern theatres are fitted with fixed hand basins which are almost impossible to clean and which can never be sterilised. The different methods of sterilising catgut are described at considerable length. The author acknowledges that he has lost a case from the use of this material and yet he appears still to employ it. For our own part we do not think that its advantages counterbalance the great difficulties experienced in completely sterilising it. Dr. McKay uses gauze sponges but he does not mention the very useful and safe method of using sterilised gauze as sponges in rolls sufficiently long to prevent their being lost in the abdominal cavity. Many operators now always use these in abdominal surgery. For disinfection of the hands the author recommends Lockwood's method of employing a solution of biniodide of mercury in spirit. He is strongly in favour of rubber gloves.

The part of the book which we consider most valuable is that dealing with the after-complications of abdominal sections. Dr. McKay has made a point of very carefully watching his cases and his descriptions of the symptoms, diagnosis, and treatment of those dreaded sequelæ severe shock, hæmorrhage, septic infection, and peritonitis are particularly good. Other chapters, too, which bear evidence of the author's accurate powers of clinical observation are those on the tongue, the pulse, the temperature, and the respiration. Dr. McKay has come to the conclusion that the only purgatives of any value in the treatment of cases of abdominal section are calomel, elaterium (best combined with the calomel), sulphate of magnesium, croton oil, and castor oil. He suggests the fact that calomel so often fails to act by itself is due to the great care with which it is manufactured at the present day. When the cheaper varieties containing some sublimate are employed it acts much more effectually. Schmiederberg, further, has pointed out that calomel acts chiefly on the intestinal ganglia and these are often partially paralysed and difficult to stimulate, especially in cases of shock or peritonitis. Dr. McKay finds that a combination of three grains of calomel and two grains of pulvis elaterini compositus acts most efficiently. In the treatment of the wound after removal of the stitches the mortise and tenon method of applying strips of plaster is described but nothing is said of the much better and more efficient plan of applying a many-tailed binder of strapping completely round the abdomen.

In discussing ileus and pseudo-ileus the author states that he believes, in contradistinction to Treves and others, that if even a small annular section of the bowel loses its contractility it is capable of acting as a complete obstruction to the passage of its contents and so an ileus or a pseudo ileus may be produced. He maintains that since true peristaltic contraction is a coördinated reflex carried out by the local nerve centres in the wall of the gut, the paralysis of a segment of the gut will prevent that augmentation of contraction above and inhibition of contraction below any point which are necessary before any object in the bowel can be moved on.

Some of the most interesting of the remaining chapters are those on peritonitis and its treatment, post-operative adhesions and intestinal obstruction, foreign bodies left in the peritoneal cavity, and post-operative hernia. The book is one which we can recommend strongly to every surgeon as even the most experienced will not fail to learn something from its perusal.

LIBRARY TABLE.

The Preparation and Mounting of Microscopic Objects. By THOMAS DAVIES. Edited by JOHN MATTHEWS, M.D. Edin., F.R.M.S. London: C. A. Pearson, Limited. 1905. Pp. 214. Price 2*s.*—This is a new edition of a well-known little book, the first edition of which was published in 1863, and it will be found extremely useful to all beginners in microscopy and for general work with the microscope. It is stated in the preface that additions have been made in order to extend "the usefulness of the book to a new class of readers—the medical student and the junior medical practitioner. To this end, besides other matter, a brief prefatory chapter has been added embracing the elements of preliminary histological manipulation." The references to blood and method of staining, for example, are, however, too brief for the purposes of the present-day medical student, while the biologist and the histologist will naturally refer to larger works. On the other hand, the book contains almost everything which the general, as distinct from the particular, student of microscopy may desire to know, and several useful suggestions are given for the improvising and making of home-made accessories. There are a good index and a few illustrations. So much excellent matter is provided at a low price that it is, perhaps, ungrateful to ask for more, but the addition of a chapter on the microscope itself would have made the book of still greater practical value.

Handbook of Travel-talk: Being a Collection of Questions, Phrases, and Vocabularies in English, French, German, and Italian. Nineteenth edition. London: Edward Stanford 1905. Pp. 688. Price 3*s.* 6*d.*—This small volume is intended as a pocket companion for ready reference and in apology to scholars the preface says at the outset that "even a scholar, who is able to read foreign works with tolerable facility, may find himself at a loss when he comes to attempt the colloquial phraseology of the roadside or the terms belonging to any particular art, science, or profession." The truth of this remark is well known to any of us who, with an academical knowledge of the language, have

attempted to travel in a foreign country. The handbook is replete with information upon all practical points and quite up to date, a section having been added especially dealing with motoring. In this connexion the phrase, "I see a policeman; go slowly," is decidedly significant and proves that the salutary police-trap does not exist only on the Brighton and Bath roads. The book would be a most useful companion to any English traveller on the continent. By the way, why is develop twice on one page spelt with a terminal "e"?

JOURNALS AND MAGAZINES.

Edinburgh Medical Journal.—The June number opens with an address by Professor J. Chiene dealing with the origin of tumours which he attributes to developmental defect—an excess of "maternal influence," the exact meaning of which is not very clear. An interesting paper on the Medico-Legal Relations of Intemperance is contributed by Dr. Stanley B. Atkinson, barrister-at-law. Mr. C. Ernest Pronger sets forth views similar to those recently urged by him in our columns (THE LANCET, June 10th, 1905, p. 1573) as to the far-reaching effects upon health of errors of refraction and gives notes of some cases illustrating this source of trouble. Dr. Walter Ker records certain facts which, in his opinion, tend to throw doubt upon the conveyance of small-pox by the air to districts in the neighbourhood of a small-pox hospital.

Scottish Medical and Surgical Journal (June).—An interesting address delivered to the Odonto-Chirurgical Society of Scotland by Dr. G. Lovell Gulland upon neuralgia forms the principal feature of this issue. The relation of pain to morbid conditions of the mouth is discussed and illustrations are added showing the distribution of such referred pain in the case of individual teeth. Dr. A. H. F. Barbour narrates a case of climacteric hæmorrhage due to sclerosis of the uterine vessels and refers to the literature of this condition, which is of some importance in that curetting is incapable of effecting permanent arrest of the bleeding and hysterectomy is necessary. Mr. Alfred A. Young records some cases of perforated gastric ulcers in which recovery occurred either with or without operation.

Birmingham Medical Review.—In the May number of this review is contained the first of the Ingleby lectures upon Mentally Defective Children, by Dr. James Kerr. It is full of interest, dealing as it does with conditions leading to defects of speech and of allied functions. The curious condition known as moral imbecility is also alluded to. We hardly think that the term "ammoral" as a synonym of non-moral has much merit, and we hope that other writers will not be tempted to adopt it. Dr. Alex. Findlay continues his exposition of the application of physical chemistry to medical and biological science and gives some illustrations of the application of the theory of ionisation to explain physiological phenomena. Dr. W. Arthur Foxwell writes a short note upon insomnia, especially that occurring in gouty subjects, and the possibility of treating it in some cases without the administration of hypnotics.

New Inventions.

AN EMERGENCY POISONING CASE.

CASES of acute poisoning occur not infrequently in which proper treatment at the time would result in the saving of life or the averting of serious consequences. Ready and effective measures are indicated to obtain satisfactory results in such cases and the general practitioner is sometimes not in a position to take these measures. In order to supply this want I have recently devised an emergency case, an illustration of which is here given. The case is compact and handy and neatly finished in black leather. Its outside dimensions are 12 inches long, four and a quarter inches wide, and six inches high. The contents are as follows: one stomach tube, one tongue forceps, one mouth gag, one two-ounce glass syringe, and one hypodermic syringe. It also contains large bottles of magnesium sulphate, of zinc sulphate in 20-grain powders, powdered mustard, calcined magnesia, and chloroform. The one-ounce vials contain amyl nitrite, alcohol,

dialysed iron, acetic acid, oil of turpentine, and aromatic spirit of ammonia. The half-ounce vials contain powdered ipecacuanha, powdered opium, potassium bromide, chloral hydrate, and potassium permanganate. The hypodermic tablets are of strychnine sulphate, morphine sulphate, pilocarpine muriate, apomorphine hydrochlorate, nitroglycerine, digitalis, and atropine sulphate. The case also contains a manual on acute poisoning, giving special symptoms, simple tests, chemical antidotes, physiological antagonists, and treatment.

New York City. JOHN W. WAINWRIGHT, M.D.

A RHEOSTAT FOR USE WITH THE CYSTOSCOPE.

THE accompanying picture illustrates the rheostat made for me by Mr. Trotter of Glasgow which I have found most useful whenever electric light is available, as it saves carrying secondary batteries. The rheostat works in connexion with the ordinary electric light and is reduced through a 50 candle-power lamp, so that a steady cystoscopic light is

maintained without the anxiety of failure which so frequently occurs with secondary batteries. The cost of the rheostat is only 30*s.* and it is easily carried in an ordinary small operating bag. It has been so useful to me that I write this short note recommending it.

J. CRAWFORD RENTON, M.D. Edin.,
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Glasgow.

SANITATION AND THE PANAMA CANAL.

THE SOLUTION OF CERTAIN CLIMATIC AND HYGIENIC PROBLEMS.

BY JOHN GEORGE LEIGH.

III.[1]

MANY circumstances conspired to lighten the task imposed upon the Health Department in the Panama Canal Zone. Indeed, it is not too much to say that, had they been vested with larger authority and more generously provided with funds, the chiefs of this department could not have been better situated for solving the important problems with which it was, and remains, their duty to cope. There is nothing mysterious or doubtful about the diseases which they are called upon to combat; these have been so closely studied during recent years that there no longer exists considerable uncertainty as to their causes and the best means of treating and controlling them. As a matter of fact, among the medical staff now in authority in the Isthmus are men of world-wide reputation in connexion with these very diseases and tropical sanitation generally. The climate and associated local conditions are noisome, as has been demonstrated, but their worst effects are well understood, and the data available respecting earlier disappointments and failures should now be invaluable as guides and warnings. Most important, however, of all the advantages referred to are those associated with the political conditions ruling in the Canal Zone. One of the leading purposes of the creation of this territory was to secure for the United States authorities ample opportunity for putting in force such sanitary rules and regulations as might be deemed necessary during the construction of the canal, and subsequently, for the preservation of public health. This will be sufficiently demonstrated by the following excerpts from the treaty between the United States and the Republic of Panama, which came into operation early last year:—

Article II.—The Republic of Panama grants to the United States in perpetuity the use, occupation, and control of a zone of land and land under water for the ..... sanitation and protection of said canal ..... extending to a distance of five miles on each side of the centre line of the route of the canal to be constructed, the said zone beginning in the Caribbean Sea three marine miles from mean low-water mark and extending to and across the Isthmus of Panama into the Pacific Ocean to a distance of three marine miles from mean low-water mark—with the proviso that the cities of Panama and Colon and the harbours adjacent to said cities, which are included within the boundaries of the zone above described, shall not be included within this grant. The Republic of Panama further grants to the United States in perpetuity the use, occupation, and control of any other lands and waters outside the zone which may be necessary and convenient for the ..... sanitation and protection of the said enterprise. The Republic further grants in like manner to the United States in perpetuity ..... the group of small islands in the Bay of Panama, named Perico, Naos, Culebra, and Flamenco.

Article III.—The Republic of Panama grants to the United States all the rights, power, and authority within the zone mentioned which the United States would possess and exercise if it were the sovereign of the territory within which such lands and waters are located, to the entire exclusion of the exercise by the Republic of Panama of any such sovereign rights, power, or authority.

Article VI.—All damages caused to the owners of private lands or private property of any kind by reason of ..... the works of sanitation and protection herein provided for shall be appraised and settled by a joint commission appointed by the Governments of the United States and the Republic of Panama, whose decisions as to such damages shall be final and whose awards as to such damages shall be paid solely by the United States. ..... The appraisal of said private lands and private property and the assessment of damages to them shall be based upon their value before the date of this convention.

Article VII.—The Republic of Panama grants to the United States within the limits of the cities of Panama and Colon and their adjacent harbours and within the territory adjacent thereto the right to acquire by purchase or by the exercise of the right of eminent domain, any lands, buildings, water rights or other properties for the construction, maintenance, operation, and protection of ..... any works of sanitation, such as the collection and disposition of sewage and the distribution of water in the said cities of Panama and Colon which, in the discretion of the United States, may be necessary and convenient. ..... All such works of sanitation ..... shall be made at the expense of the United States, and the Government of the United States, its agents or nominees shall be authorised to impose and collect water rates and sewerage rates which shall be sufficient to provide for the payment of interest and the amortisation of the principal of the cost of said works within a period of 50 years and upon the expiration of said term of 50 years the system of sewers and waterworks shall revert to and become the properties of the cities of Panama and Colon respectively, and the use of the water shall be free to the inhabitants of Panama and Colon, except to the extent that water rates may be necessary for the operation and maintenance of said system of sewers and water. The Republic of Panama agrees that the cities of Panama and Colon shall comply in perpetuity with the sanitary ordinances, whether of a preventive or curative character, prescribed by the United States; and in case the Government of Panama is unable or fails in its duty to enforce this compliance by the cities of Panama and Colon with the sanitary ordinances of the United States the Republic of Panama grants to the United States the right and authority to enforce the same.

It will be evident from the above that so far as treaty rights and authority are concerned the United States Government has everything in its favour, and that there was ample justification for the opinion expressed by Dr. W. C. Gorgas soon after his appointment as head of the health department that the conditions were such that "we ought to be able to get up a model sanitary department," rivalling on a small scale the most efficient and best-equipped of any modern nation. The Canal Zone, or territory immediately under the jurisdiction of the United States, consists of rather less than 500 square miles, with a population, exclusive of the canal staff but including many labourers on the works, of, according to a quite recent census, 9742. Of these people 807 live at La Boca and 540 at Ancon, which may be described as suburbs of the city of Panama; 1393 at Culebra and 933 at Empendor, in the neighbourhood of the great mountain cutting; 668 at Gorgona and Matachin; 723 at Bohio and the small adjacent villages; 555 at Gatun, and 1160 at Cristobal, in the vicinity of Colon. The cities of Panama and Colon, with populations of, respectively, 20,262 and 7214, are equally under American authority so far as health and sanitation are concerned; consequently, if we take into consideration recent immigration (see Table V.) and the probable demands of contractors and engineers it may be anticipated that a year hence the population along the canal line will exceed 50,000 and possibly even reach 60,000.

TABLE V.—*Immigration into the Canal Zone and Cities of Panama and Colon from July 1st to December 31st, 1904.*

Month.	Arrivals.	Departures.	Excess of arrivals.
July	1680	762	918
August	2724	1920	804
September	1569	1242	327
October...	1776	1104	672
November	1876	1558	318
December	2431	1828	603
Totals...	12,056	8414	3642

The French canal companies, it should be remembered, possessed no police powers and were therefore unable to exercise other than moral suasion (a frail reed on which to rely in such a campaign) upon the inhabitants along the canal route to cleanse their reeking villages and to observe the elementary laws of health. All they could do was to devote considerable sums of money to the erection and maintenance of hospitals for the treatment of their employés and occasionally other denizens in the Isthmus. During the first years of its existence the New Company devoted very considerable attention to the improvement of sanitary conditions, but more recently, thanks to its uncertain tenure of the canal property and the disturbed state of the country, its zeal very sensibly abated. Thus it happened that when the control of the enterprise passed to the United States the towns and villages along the canal line were more than normally filthy, while the hospitals were almost completely denuded as regards both staff and supplies. Fortunately there was at that time no prevalent sickness on the Isthmus; during the preceding 12 months there had been a few cases of yellow fever and small-pox, considerable mortality caused by consumption, but no cholera or plague. During the early months of 1904 the total deaths reported in Panama were: in January, 92; in February, 95; in March, 94; and in April, 63. Of these, beriberi accounted for 16; dysentery for 17; malaria for 11; "fever," unclassified, for 47; tuberculosis for 46; and yellow fever for 4. The deaths from the last-mentioned disease during the years 1901, 1902, and 1903 were respectively 11, 182, and 48, the large mortality in 1902 being attributed to the presence in Panama of many soldiers, non-immunes, from the mainland of Colombia. It was found that in Colon the most common and fatal disease was

[1] Nos. I. and II. were published in THE LANCET of June 3rd (p. 1530) and 10th (p. 1597), 1905, respectively.

pernicious malaria, endemic throughout the year and especially serious in its ravages during the rainy season.

The American authorities discovered, on taking possession of the properties of the canal company, that two of the hospital wards at Ancon were being used by a local society for the care of strangers attacked with sickness at Panama. The buildings generally were in fair condition and demanded only comparatively small repairs and minor alterations to be adapted to modern requirements. Their existing capacity was about 500 beds, but in case of emergency sufficient ward space was available for 200 additional beds. The hospital, which is built on the pavilion plan, is admirably situated, well elevated above the city, and surrounded by beautiful grounds. A less satisfactory report was forthcoming respecting the condition of the company's hospital at Colon, but the work of remodelling and putting into proper repair the various buildings is now, it is understood, complete, as also is the transfer to this institution of a second hospital at Colon heretofore under the control of the Panama Railroad Company. It was believed by the Canal Commission of 1904 that hospital buildings providing accommodation for 300 beds would meet all requirements at the Atlantic terminal of the canal; to-day, however, the situation is of such character as to demand the early erection of another hospital and an expenditure of $40,000 for this purpose has quite recently been sanctioned. Some years ago a large building was erected on the island of Taboga, in the bay of Panama, for the benefit of convalescent canal employés. This has been repaired by the American authorities and will soon, it is believed, be put to its former use.

Scant attention appears to have been paid by the native government of the Isthmus to the care of the afflicted or indigent population. In the city of Panama there is a municipal institution known as the Hospital San Tomas, to the small income of which patients contribute at fixed rates dependent upon their financial position. There is also in the same city an almshouse, the Asilo de Bolivar, with accommodation for about 70 inmates, hopelessly indigent or afflicted with chronic ailments. These buildings were found to be in a very unsatisfactory condition, which, however, has recently been somewhat improved. Up to last year the local government made little or no provision for the care of lepers or of the insane but in accordance with an agreement arrived at in December progress is now being made with the erection of a hospital by the Canal Zone authorities, to which the Republic of Panama may send persons insane or afflicted with leprosy and the indigent sick upon payment of a certain rate per capital. By the same and other agreements the Panama authorities granted to the United States complete sanitary and quarantine control over the cities and ports of Colon and Panama and power to exclude from the Canal Zone and other places under American jurisdiction any persons whose presence may be deemed to endanger the public health or in any manner impede the prosecution of the work of opening the canal.

Among the first acts of the late Canal Commission were the constitution of a Health Department as a sub-department of the Canal Zone government and the selection of two of their number, Mr. C. E. Grunsky and Mr. W. H. Burr, as a special committee on sanitation. It was arranged that the affairs of the department should be administered by a Board of Health of four members—namely, the chief sanitary officer (with authority as executive head of the department), the director of hospitals, the chief quarantine officer, and the chief sanitary inspector of the Canal Zone. Dr. W. C. Gorgas, Colonel, United States army, was appointed chief sanitary officer, with headquarters at Ancon; Dr. John W. Ross, United States Navy, director of hospitals, stationed at Ancon; Dr. H. R. Carter, of the United States Health and Marine Hospital Service, chief quarantine officer; Dr. Louis A. LaGarde, Major, United States Army, superintendent of the Ancon Hospital; Dr. L. W. Spratling, Surgeon, United States Navy, superintendent of the Colon Hospital; Mr. Joseph Le Prince, chief sanitary inspector of the Canal Zone; and Dr. Lewis Balch, health officer of Panama. Dr. A. N. Stark was later assigned to duty as health officer of Colon, but illness compelled his resignation in September, and Dr. L. W. Spratling was appointed to succeed him.

An engineering force was also organised for the special purpose of designing and constructing waterworks and sewer systems for the cities of Panama and Colon. To supply water to the former it was decided to build a reservoir at the headwaters of the Rio Grande, about ten miles from the city, and thence to convey the water in a 16-inch cast-iron pipe to a distributing reservoir having a capacity of 1,000,000 gallons constructed on the summit of a hill at Ancon. This water-supply system, which will, I understand, be shortly in operation, has been designed on the basis of a minimum supply per diem of 60 gallons per head for a population of 30,000. It is possible that eventually the chief source of supply for both Panama and Colon and the entire Canal Zone between these terminal points will be the reservoir formed by the great dam to be constructed at Gamboa or elsewhere for the purpose of controlling the Chagres floods. A very complete sewer and drainage system, estimated to cost £52,870, has been designed for the city of Panama and considerable progress is reported as regards its construction.

Greater difficulty and delay are involved in the case of kindred works at Colon. This city is built upon a flat sandy island, no part of which is more than a few feet above mean sea level; indeed, considerable portions are covered with water at high tides. Some years ago the Panama Railroad Company built a small reservoir near Mount Hope, about two and a half miles from the city, and from this water of indifferent character has been, and is still, supplied to what may be described as the official quarter of Colon, the remainder of the population having to content itself with rain water falling upon the corrugated iron roofs and buildings and collected in tanks. At the time of the last available report on the subject the problem of a water-supply for Colon seemed yet unsolved. The same must also be said concerning the design of an efficient system of sewers. The difficulties connected with this will probably have to be met by raising the general surface of the town and utilising for this purpose the excavation from the inner harbour constituting the entrance to the canal. Until recently the authorities appeared justified in regarding the delay as of less moment than would have been equivalent troubles at Panama, for Colon, once reputed to be even more dangerous to health than the Pacific city, enjoyed during the years 1893–1904 comparative immunity from infectious diseases and, indeed, quite escaped the yellow fever epidemics of 1897, 1899, and 1900. This has been attributed by Dr. Lacroisade and others to the minor sanitary works executed in the early "nineties," the filling up of the small swamps in and about the city, and the cleaning of streets which formerly were "veritable sewers," and up to last year, in the opinion of a majority of visitors, continued to merit the same description. Whatever be the value of these explanations as regards the past it is now certain that there should be no undue delay in materially improving the health conditions of the city, for, in addition to a general death-rate higher than for many years past, Colon has recently been visited with an outbreak of yellow fever peculiarly fatal to prominent canal employés, among the victims being Mr. Johnson, the chief architect, and Mr. West, the auditor.

It became evident to the United States authorities, immediately after the transfer of the canal property, that their first duty was to protect the Isthmus from the introduction from abroad of infectious diseases, and that this could only be done by acquiring control of the quarantine and strictly enforcing the necessary regulations. At Panama especially the inspection of shipping had hitherto been very lax, nor did there exist any equipment for the disinfection of vessels or isolation of infected cases. Fortunately, the Panama Government raised no objection, and on May 24th Dr. Claude Pierce was appointed quarantine officer for the port of Panama pending the arrival of Dr. Gorgas. It was not, however, until July 1st and 16th respectively that the Commission assumed control of the quarantine at Panama and Colon. A record of the principal work at these ports from the dates mentioned to the close of the year will be found in Table VI., to which might be added a note concerning the sanitary supervision of the hulks and tenders in the harbours and wholesale destructions of rats, by poison, traps, and fumigation.

Apart from the quarantine service and hospital work, to which fuller reference will presently be made, the energies of the Health Department have been mainly directed to improving the sanitary conditions in the terminal cities and along the canal route. This has very properly been regarded as an indispensable duty, preliminary to the introduction of the army of labourers required for the completion of the enterprise. Although much remains to be done before it can truthfully be said that the Canal Zone is in fit condition for the reception of large numbers of immigrants, the record of work so far achieved is eminently creditable and it is

TABLE VI.—*Maritime Quarantine Work at the Ports of Colon and Cristobal and the Ports of Panama and Ancon.*

—	July 16th to 31st.	August.	September.	October.	November.	December.
Colon and Cristobal.						
Vessels inspected and passed	20	31	43	40	43	41
Total number of crews inspected	1424	2366	2884	2377	3139	2662
otal number of passengers inspected	888	1847	1445	1951	1885	2719
Persons held under observation to complete period of incubation of yellow fever ...	10	11	—	19	21	11
Persons detained on board ship for refusing to comply with vaccination ordinance	—	—	2	—	—	—
Persons vaccinated	1	—	22	93	120	144
Panama and Ancon.						
Vessels inspected and passed...	13	13	13	12	11	13
,, detained n quarantine	—	—	2	1	—	—
,, disinfected	—	—	1	1	—	1
,, fumigated for rats ...	—	3	1	7	—	—
Total number of crews inspected...	780	931	958	899	798	947
Total number of passengers inspected	411	614	444	352	491	427
Persons held under observation	—	27	56	39	44	43
Persons vaccinated	—	—	6	12	10	129
Persons sent to hospital (non-quarantine diseases)	2	3	3	2	—	—*

* One small-pox patient was brought ashore, isolated for treatment, and died; all persons on board were vaccinated and all those who had been exposed were kept under observation. The vessel was disinfected and no other cases resulted.

satisfactory to note that, generally speaking, the native inhabitants are accustoming themselves to the demands of the sanitary authorities and are even giving promise of eventual willing coöperation. The first step to this end has been a strenuous endeavour on the part of the authorities to combat the prejudice against hospital treatment which everywhere seems inseparable from ignorance. Dr. Gorgas found in this prejudice his chief difficulty during the severe epidemic of yellow fever in Havana and that the people at first would take the risk of any punishment rather than report their sick. Eventually, however, the reputation of the hospital overcame this trouble. Concealment of cases became more and more infrequent, until at last the disease was to all intents and purposes absolutely stamped out. There no doubt remain in and about Havana plenty of mosquitoes of the stegomyia variety, but they have had no opportunity during the past four years of biting a human being infected with yellow fever and are consequently themselves entirely harmless.

It is not too much to hope that a similar triumph of preventive medicine over not only yellow fever but also the more widely diffused malaria may attend United States' control in Central America. Dr. Gorgas is here employing (but, as has been shown, under more propitious conditions) the same methods which proved so successful in Havana—viz., a systematic cleaning up of the terrain, a no less systematic and wholesale destruction of the stegomyia and anopheles and their breeding places, and the treatment under screening of all infected or suspected cases. During the past ten years or more there have been many instances—e.g., at Ismailia, in Cuba, on the properties of several of the Gold Coast mining companies, and elsewhere in Africa, under Dr. Koch—of malaria being controlled by destroying the breeding places of the anopheles and so treating the infected human being that he could not poison the mosquito. All these trials, however, have been on a small scale as compared with the experiment now in progress on the Isthmus of Panama, which is practically an attempt to free an entire population from the malarial infection. Not the least satisfactory feature of the enterprise is the fact that Dr. Gorgas has approached the problem hopefully but without any false ideas as to its simplicity. "We shall," he has said, "no doubt, meet with many disappointments and discouragements, and shall succeed in the end only after many modifications of our plans and after many local failures."

The extent to which the natives of the Canal Zone are infected with malaria is demonstrated by a series of interesting experiments (Table VII.) made at Bohio and other villages along the canal line during October, November, and December last. The figures indicate (1) that not fewer than from 50 to 60 per cent. of the inhabitants of the Canal Zone

TABLE VII.—*Blood Examinations to Determine the Malarial Index of Infection of the Native Population along the Canal Zone.*

No. of cases.	Result. Positive.	Result. Negative.	Re-examined.	Result. Positive.	Result. Negative.	Parasite found. Tertian.	Æstivo-autumnal.	Mixed.
*20	13	7	1	—	1	—	12	1
31	21	10	6	4	2	—	—	—
54	33	21	—	—	—	1	33	—
67	49	18	3	3	—	—	18	1
†22	17	5	3	2	1	—	17	—
‡10	9	1	2	2	—	—	—	1
25	15	10	—	—	—	1	14	—
42	12	30	—	—	—	—	12	—
§19	3	16	4	—	4	—	—	—
‖28	18	10	28	—	28	—	—	—
¶16	11	5	16	5	11	—	—	—
40	13	27	—	—	—	—	13	—
**256	126	129	15	6	9	4	125	—

Remarks.—* One patient had tertian, æstivo-autumnal, and crescence parasites. Age one year. † In one case the temperature was 103° F. at 9 A.M. and there were no parasites, while at 2.15 P.M. the temperature was 100° and there were parasites. ‡ Highest temperature 103·8°. § Machete men. Highest temperature 104·8°, lowest 98°. ‖ Schoolgirls. Re-examined after the administration of cinchona ten days later. ¶ Schoolboys. In almost every case the temperature was above 99°, in some it was above 100°. Re-examined after ten days' administration of quinine. ** Summary of cases. All the 15 re-examinations mentioned were made in positive cases and after 21 days' administration of quinine (four grains per day). The result shows nine cases cured.

are infected by the malarial plasmodium and that consequently the only essential for new arrivals to contract malaria is the presence of anopheles; and (2) the very positive value of quinine as a destructive agent for the malarial parasite. To the virulent character of the types of malaria endemic on the Isthmus striking testimony is given in Table VIII.

TABLE VIII.—*Statistics of Malarial Cases Treated at Ancon Hospital.*

—	From June 13th to Oct. 31st. Cases.	From June 13th to Oct. 31st. Deaths.	November. Cases.	November. Deaths.	December. Cases.	December. Deaths.
Malarial fever, æstivo-autumnal	147	1	49	4	70	1
Malarial fever, single tertian	8	—	5	—	5	—
,, ,, double tertian	12	—	3	—	4	1
Malarial fever, æstivo-autumnal and double tertian	2	—	—	—	—	—
Malarial fever, clinical	18	1	3	—	7	—
Hæmoglobinuric fever, æstivo-autumnal	3	1	—	—	—	—
Hæmoglobinuric fever, tertian	1	—	—	—	—	—
Malarial cachexia, æstivo-autumnal	3	—	2	—	1	—
Malarial cachexia, tertian ...	1	—	—	—	—	—
,, ,, clinical ...	11	1	2	—	—	—
Total	206	4	64	4	87	2

It will be remembered that this paper was prompted by two questions, of which the first had reference to the probable effects of the pernicious climatic and sanitary conditions of the Isthmus upon the vast army of immigrant labour required to complete the canal. The American authorities, including those charged with the health administration, estimated, when they assumed control of the Canal Zone and cities of Panama and Colon, that one year's work would effect such a wholesome revolution as henceforth to warrant the inclusion of the canal region among the most healthy of tropical countries. It is with unfeigned regret that I reach the conclusion that this anticipation has been woefully frustrated, and this I do without depreciating the gravity of the difficulties which it was only reasonable to expect and of others, infinitely more discouraging, caused by false economies, delays in furnishing supplies, and the inherent faultiness of the law under which the late Canal Commission was appointed. That both in the terminal cities and throughout the Canal Zone great sanitary improvements have been effected during the past 12 months no one can deny; but they fail to constitute a situation sufficiently favourable to justify defiance of the enormous hygienic dangers involved in a precipitate inauguration of the ambitious engineering programme to which I alluded in the introductory portion of this paper.

Evidence of the gravity of the task undertaken by the American sanitary authorities may be found in the fact, now generally admitted, that their energetic efforts have not yet effected any appreciable diminution in the Isthmian death-rate or, indeed, in the percentage of the population demanding medical or surgical treatment. This is the more serious because it cannot be pretended that under the existing Commission they possess inadequate powers or are short-handed to any considerable degree. Indeed, the gravity of the situation becomes more marked when one remembers that, thanks to the general cleaning up which has taken place, the systematic draining work in and about the towns, the removal of brush and long grass, the filling in of low and swampy land and other places admirably adapted for the breeding of the stegomyia fasciata, anopheles, and several varieties of culex, the frequent removal of night-soil pails and garbage cans, the inspection and fumigation of infected or suspected premises, and a widespread distribution of mosquito-proof water containers, the entire region must be unquestionably regarded as in a better sanitary condition than ever in its history. Nevertheless, as will be seen from Table IX., concerning the death-rate of Panama, and the following summaries of the work accomplished by the medical and surgical staffs of the Ancon and Colon hospitals and at the emergency hospitals and dispensaries established along the canal line, the hygienic condition of the people could not well be worse.

Patients admitted into Ancon Hospital from May 4th to Sept. 30th, 1904, 477; discharged, 159; died, 21. Admitted during October, 230, of whom 145 were employés of the Canal Commission; discharged, 172; deaths, 19, of which eight were attributable to chronic nephritis, two to malarial fever, two to lobar pneumonia, two to pulmonary tuberculosis, and one each to tuberculous meningitis, ankylostomiasis, aneurysm of the aorta, bronchial asthma, and suppurative cholecystitis. Admitted during November, 202, 112 being employés; discharged, 189; deaths, 17—three from pernicious malaria, three from lobar pneumonia, four from chronic nephritis, and the remainder from paraplegia, bacillary dysentery, uræmia, aneurysm of the aorta, and ankylostomiasis or emphysema. Admitted during December, 254 (173 employés); discharged, 234; died, 16—two from chronic interstitial nephritis, two from pulmonary tuberculosis, and the remainder from epithelioma of the penis, tertiary syphilis, chronic bacillary dysentery, abscess of the liver, variola, beri-beri, stricture of the urethra and pyæmia, apoplexy, typhoid fever, acute gonorrhœal arthritis, and double tertian malarial fever or æstivo-autumnal malarial fever. During November and December, also, 1021 cases, 472 being employés, were treated at the Ancon free clinic.

The number of patients taken over when the Canal Commission assumed control of the Colon Hospital on Sept. 14th was 33, of whom three were paying patients and one was a canal employé. From the date mentioned to Oct. 31st there were admitted 121; one died and 125 were discharged; 198 cases, including 42 employés, were also treated by the out-door department. During November 82 patients, of whom 20 were employés and ten were paying patients, were admitted; 74 were discharged and seven died; the out-door department treated 451 cases, including 92 employés. During December 110 patients, 45 of whom were employés and 21 were paying patients, were admitted; 97 were discharged and eight died, five being employés; the out-door department treated 664 cases, including 179 employés. The deaths in Colon outside the hospital during October numbered 33, the annual rate per 1000 of population being 34·5; in November they were 21, the annual rate being 30·564; and in December they were 32, the annual rate being 48·85.

At the Culebra emergency hospital during the seven months ended Dec. 31st 2325 patients were treated and from the same establishment 196 cases were sent to Ancon. At Gorgona 893 cases were treated from August 26th to the end of the year, 24 cases being sent to Ancon. At Bohio, from Oct. 17th to Dec. 31st, the staff had under treatment 541 patients, of whom 15 where transferred to Ancon Hospital. At the Emperador dispensary, during six months, 1169 patients were treated; while at smaller similar institutions established during the last month of the year at Gatun, Frijoles, Tavernilla, and San Pablo, a total of 75 patients sought relief. It may be noted that malaria, inflammation of the bowels, chronic rheumatism, tuberculosis, and venereal diseases constituted a very striking proportion of the ailments treated in the hospitals of the Canal Zone.

From these figures it would appear that during the course of very few months no fewer than 8756 persons out of a total population, allowing for the latest arrivals, of little more than 40,000 found cause to avail themselves of medical or surgical treatment—and this notwithstanding a marked improvement in the health conditions of the country. Later statistics not only signally fail to suggest a more hopeful outlook but even add to the gravity of the situation, for, quite recently, in addition to rising mortality and sickness returns the Health Department has been called upon to face unexpected and alarming epidemics of yellow fever. These visitations should serve to curb the impatience of many Americans concerning the alleged undue delay in commencing on a large scale the work of canal construction. It must now be evident, even to the most confirmed doubter, that yellow fever is still endemic on the Isthmus and that neither Colon nor Panama can be considered reasonably secure from a recurrence of dangerous outbreaks until each is provided with an ample and wholesome water-supply, for,

TABLE IX.—*Deaths in the City of Panama for October, November, and December, 1904.*

—	October.	November.	December.
General diseases—			
Alcoholism, chronic	3	0	1
Beri-beri	10	10	14
Colic	6	9	10
Dysentery	1	1	8
Fever	10	8	16
Fever, bilious	0	0	1
Fever, pernicious	5	2	2
Malaria	2	3	2
Malarial cachexia	2	0	0
Phthisis	0	2	8
Putrid infection	1	0	0
Rheumatism, articular	2	0	0
Rheumatism, chronic	0	0	3
Syphilis	0	1	0
Tuberculosis, lungs	11	8	0
Whooping-cough	1	0	0
Diseases of the nervous system and organs of special sense	13	10	13
Diseases of the circulatory system	3		4
Diseases of the respiratory system	14	10	14
Diseases of the digestive system	8	4	13
Diseases of the genito-urinary system and adnexa	8	4	4
Diseases of the skin and cellular tissue	0	2	0
The puerperal state	4	3	5
Early infancy	0	0	1
Senile debility	0	3	1
Suicide	1	0	0
Accident	0	1	0
Ill-defined diseases	20	18	14
—	125	106	134

Of the 125 deaths reported in October 17 occurred in the Hospital San Tomas and 17 in Ancon Hospital. Of the latter two were of patients sent in from the Canal Zone stations, and should, consequently, in estimating the death-rate be deducted, as should also be 14 stillbirths. The remaining 101 deaths represent an annual rate per 1000 of 59·80. During November, of the 17 deaths occurring in Ancon Hospital, nine were cases sent in from zone stations. Deducting these and eight stillbirths the deaths represent an annual rate per 1000 of 52·70. Deducting six outside cases occurring in Ancon Hospital and ten stillbirths the total for December represents an annual rate per 1000 of 69·816.

In addition to rising mortality and sickness returns the Health Department has been called upon to face unexpected and alarming epidemics of yellow fever. These visitations should serve to curb the impatience of many Americans concerning the alleged undue delay in commencing on a large scale the work of canal construction. It must now be evident, even to the most confirmed doubter, that yellow fever is still endemic on the Isthmus and that neither Colon nor Panama can be considered reasonably secure from a recurrence of dangerous outbreaks until each is provided with an ample and wholesome water-supply, for,

pending such improvement, it is obviously impossible to prohibit the use of water containers, the favourite breeding place of the stegomyia mosquito. Nor can it be hoped, until the long-promised waterworks and sewers are in operation, that there will be any sensible diminution in the general death-rate. In view of all the circumstances, and apparently for some time to come, the only possible reply to the first point raised in the present discussion seems to be a direct and unequivocal negative.

In default of immediate and almost heroic measures to develop better sanitary conditions the Canal Commission may shortly find the operations of its engineering and other staffs seriously hindered, not only by difficulty in obtaining additional labour but also by panic among its existing force. Although it should now be matter of almost general knowledge that yellow fever is not contagious in the same sense as is small-pox or scarlet fever, the reported presence of this much-dreaded malady invariably excites an amount of terror quite disproportionate to the actual danger. Reports, no doubt exaggerated, respecting the recent outbreaks on the Isthmus have already produced such effects in Jamaica, Porto Rico, and other potential labour-recruiting fields as materially to lessen the supply of cheap labour arriving from these places. The proposal to get over this difficulty by importing a considerable number of Japanese and Chinese coolies will, it is to be hoped, signally fail, for it is notorious that Asiatics are the most susceptible of any people to yellow fever infection. Within the past few months a remarkable percentage of the Japanese in Panama have been attacked, and it is scarcely necessary to recall to memory the enormous mortality among the Chinese and Indian coolies in the days of the de Lesseps company and during the construction of the Panama Railroad. Even as regards the white employés, recent events have had untoward effects, for, according to Mr. John Barrett, the ex-United States Minister to Panama, himself one of the most optimistic of men concerning the canal, the frequent changes (caused by fear of yellow fever and other illness) among the foremen of all classes, the locomotive firemen and drivers, steam shovel operators, clerks, and engineers, have already much reduced the efficiency of the work accomplished. Unless conditions are improved and wages are greatly increased it is doubtful, says Mr. Barrett, if men of this class can be kept on the Isthmus—"there is no use in obscuring the truth in this respect."

I have left myself but short space in which to refer to the probable effects of the completed canal upon public health, nor indeed is it necessary at this moment to devote considerable attention to the question. Recent events may postpone by many months the recommencement on a large scale of the work of construction, for there is no doubt that in the course of what may be described as the preliminary campaign against climate and disease the American authorities have sustained a regrettable repulse. That they will eventually conquer is equally certain and the more decisive the victory is the more permanent should be its results. In order to insure for the completed canal the confidence and support of commerce its builders must so modify existing health conditions as to deprive foreign ports of legitimate cause specially to mistrust shipping newly arrived from the Isthmus. Even now it is well to remember that there are other places no less notorious for the dissemination of disease. There may be some doubt as to the climatic conditions necessary to propagate yellow fever, but no difference of opinion can exist as to the most favourable local requirements—defective drainage and decomposing organic matter. If supplied with the needful food, in the shape of filth, the germs will thrive in spite of quarantine but if starved by cleanliness their development is checked. When, as may be hoped, the United States authorities are able to convince the outside world that, thanks to improved sanitation, yellow fever is no longer endemic on the Isthmus an object lesson will have been provided which should not fail to have widespread influence. With such example of success before them the health officials of ports in the Gulf of Mexico, in Eastern Asia, and on the eastern and western littorals of South America, which are now frequently visited by yellow fever and which by the completion of the Panama Canal will be brought into closer and therefore dangerous relations, may possibly be inspirited to a more comprehensive appreciation of their responsibilities. Thus it may happen that not only may the Panama Canal not endanger public health but even serve as a factor in its general promotion.

Looking Back.

FROM

THE LANCET, *SATURDAY*, June 23, 1827.

MAL-TREATMENT OF ASSISTANT SURGEONS IN THE NAVY.

To the Editor of THE LANCET.

SIR,—On a subject interesting to many of your medical readers, particularly those whose object it is to enter the public service of their country, I have taken the liberty to address you; and, as I am convinced from personal experience that many would never enter the naval medical service were they aware of its disadvantages, I hope that the following comparative view of the army and navy medical services will not be unacceptable.

When an assistant surgeon is appointed to a ship, he finds that he is to mess with the midshipmen; and if to a ten-gun brig, he is doomed to eat his meals in a berth about six feet by seven in extent, with from six to nine messmates. This, in a tropical climate, the thermometer ranging from 85° to 90°, is far from being an enviable situation. There is seldom any *scuttle* in the berth to admit air, and at dinner the heat is so excessive, that all are obliged to strip to their shirts. In order to accommodate the captains, and the gun-room mess, the midshipmen are obliged to dine at twelve o'clock, when the heat is greatest. Add to this the privation of fresh meat and vegetables at sea, sometimes for months together, and contrast the navy assistant surgeon's situation with that of the hospital assistant in the army, who sits down to the same mess table with his colonel and brother officers, considered to rank equally with them as a gentleman, dining in a comfortable airy apartment, and enjoying all the luxuries of the shore. For the assistant surgeon in the navy, no cabin is allowed, his place of repose is a hammock;* the lid of his chest must serve him as a dressing-table, and in the open steerage he has to perform all the necessary offices of ablution, &c. Look again at the army medical man, who has his quarters allotted him, with every convenience that can be procured on shore.

It is universally acknowledged, that the sea service is a much harder one than the land, and one would naturally suppose, that compensation would be made to the naval medical man in proportion; but what is the fact? The assistant surgeon in the navy may serve eight, ten, or twelve years before he obtains promotion, and instances have occurred, where the rank of surgeon was not attained until after sixteen years servitude. After all, he finds that only three years of that time will be considered as *servitude*.† Now the army hospital assistant is allowed every hour that he serves. What is the cause of this injustice?

Another thing the naval assistant surgeon has to complain of is, his being degraded to mess in the midshipmen's berth. Surely his education and respectability as a medical man, entitle him to rank with any lieutenant, master, purser, or marine officer in the navy. Why then compel him to mess with unruly boys? He is expected to study, to prepare himself for a second examination; surrounded by such troublesome companions how is he to study? The gunner, boatswain, and carpenter, who have severally risen from the rank of common sailor, are each entitled to a cabin; and yet a medical man is obliged to sleep in a hammock, like one of the lowest rank!

The condition of naval medical men calls loudly for reform, and reform must take place, or the naval service will not be provided with able and intelligent surgeons.

The assistant surgeon should have a cabin, be allowed to mess with the lieutenants, and be entitled to the same advantages of pay as the army assistant surgeon.

To those young medical men whose intention it is to become candidates for the appointment of assistant surgeon in the navy, it is to be hoped that the above observations may be acceptable, and the object of the contributor will be attained.

AN ASSISTANT SURGEON IN THE NAVY.

* A hammock is composed of a piece of coarse sacking, suspended at either extremity from the inferior surface of the deck, by bunches of cord called clews.

† See Navy List.

THE LANCET.

LONDON: SATURDAY, JUNE 24, 1905.

The Degrees in Medicine and Surgery of the University of London.

ALL those who are interested in the development of the University of London must experience a certain satisfaction in perusing the reports recently presented to the General Medical Council relating to the final examination for the degrees of Bachelor of Medicine and Bachelor of Surgery. It will be remembered that important changes in the regulations have been effected and the first examination under the new conditions was held last October and was attended by an inspector and a visitor on behalf of the General Medical Council. Perhaps the most important of these changes consists in the fusion of the degree of Bachelor of Surgery with that of Bachelor of Medicine. Formerly only a small proportion of graduates in medicine presented themselves for further examination in surgery and although an examination in surgery formed part of the final M.B. examination it occupied a very subordinate position and neither demanded nor received very much attention at the hands of the candidates. So long as it was recognised that the medical degree of the University of London was concerned primarily and essentially with medicine, in which the standard was certainly high, the surgical part of the examination was allowed to continue at a comparatively low level, with the feeling that those who wished for a higher surgical standard and for a degree in surgery could present themselves for the further examination for the degree of Bachelor of Surgery.

But circumstances recently combined to render the neglect of surgery in the examination for the degree of Bachelor of Medicine very inexpedient. The fusion of the examining boards of the Royal College of Physicians of London and the Royal College of Surgeons of England resulting in a Conjoint Board holding one set of examinations for a pass degree in medicine and surgery directed criticism to the methods of the University of London. The possession of the M.B. degree was a qualification to practise both medicine and surgery but the examination in the latter subject being inadequate placed the graduates in an unfortunate position compared to the holders of the double diploma of the English Conjoint Board. The graduates themselves, conscious of some inequality of the conditions obtaining in London as compared with those of other universities, had the right to feel aggrieved that, despite the work of a really high standard which they were called upon to do, they did not receive the attention to surgery which was given to the students at other centres and by other qualifying bodies. Still the surgical examination at the final M.B. examination of the University of London was regarded as a satisfactory test of knowledge despite a good deal of criticism until 1902 when after inspection it was reported to the General Medical Council by the visitor and inspector appointed under the Medical Acts that the examination in surgery "was not such as would secure the standard of efficiency required by the Council." The examination was then described as being on a distinctly lower level than the examinations in medicine, midwifery, and forensic medicine. Such an opinion necessitated change, even though the Council generously postponed consideration of the report of the Examination Committee. If the standard was to be raised to that of medicine there could be no reason for maintaining the separation of the degree of surgery from that of medicine, and the decision thus to raise the standard of surgery and to confer the two degrees has been welcomed on all hands. This, however, is only one of the alterations. The number of examiners has been increased both in medicine and in surgery and two new appointments have been made to allow a separate examination in pathology, while hygiene has been transferred from the examiners in medicine to those in forensic medicine, who are now styled examiners in "forensic medicine and hygiene." The examination, under the altered conditions, was visited and inspected for the General Medical Council in the past winter and the highly satisfactory result was reported to the Council at its last session.[1] The general scope of the different examinations is well illustrated by the papers which were appended to the report of the inspector and the number of marks allotted to each subject was also there given, the candidate having to obtain half marks to be permitted to pass, while the principle upon which honours were awarded lying outside the scope of the Council was not described.

An invariable recommendation of the General Medical Council that "a candidate should not be orally examined except in the presence of two examiners" appears to have been disregarded, the *viva voce* examination being invariably conducted by a single examiner who himself fixed the marks awarded to the candidate. This course of action is condoned, even justified, by the inspector of the Council, by the difficulty and expense which would be otherwise involved when the number of candidates is large; and it is explained by the Academic Registrar that in the subject of medicine alone the work of every candidate was estimated independently by each of the four examiners, and this so thoroughly that it seemed to provide all the checks necessary against the unfair operation of the personal equation in the individual examiner. The knowledge of this will probably prove consolatory to those candidates, if there are any, who leave any part of the examination with a feeling of sorrow or resentment, but we are bound to regard any divergence from the scheme of inspection of which the General Medical Council has approved with some concern. However venial in a special case a relaxation may be, it still remains a good general rule that more than one examiner should conduct a *viva voce* test simultaneously. The report of the Examination Committee of the Council draws the attention of the Council to this departure from the usual recommendations, but arrives,

[1] THE LANCET, May 27th, p. 1469, and June 3rd, p. 1508.

nevertheless, at the conclusion that the final examination of the University of London in medicine, surgery, and midwifery is "sufficient," and more than sufficient, within the meaning of the Medical Acts. Such a conclusion must be very satisfactory to all who have had any share in arranging the details of the examination, and it is evident that the authorities are actuated by an ardent desire to make every part of the examination as complete and as practical as possible. The percentage of rejections appears to have been somewhat less than usual, which goes to prove that the new conditions are better adapted to the general teaching of the student.

The Diagnosis of Glanders.

AN able report by Dr. W. B. WHERRY, bacteriologist in the Government laboratories at Manila, has been presented, under the title "Glanders, its Diagnosis and Prevention," to the United States Department of the Interior and published as Report No. 24 of the Bureau of Government Laboratories, Manila, November, 1904. It is of particular interest to English medical readers at this moment when the increase of glanders among us is being made the subject of discussion. The report gives a short account of the general nature and distribution of the disease, including a description of two cases observed in man in the Philippine Islands. Glanders is now somewhat prevalent in Manila, since during the year between Sept. 1st, 1903, and August 31st, 1904, of 3764 horses imported 165 were condemned for glanders, killed, and cremated. Dr. WHERRY'S personal experience, therefore, of a most dangerous plague has been unusally large and his report forms a valuable *résumé* of the chief facts known about the disease. There is nothing particularly novel about his teaching but his words serve to recall to our memory the characteristics of a malady with which but few medical men are familiar.

The organism, the bacillus or bacterium mallei, occurs, of course, in the discharge from the nostrils, in the pus from the specific ulcers, in the more recent nodules in the internal organs, and occasionally in the blood in acute glanders. Although the organism has very feeble powers of resistance outside the body the disease is very infectious and is transmitted by contact, by inhalation, by food and drink, and by infected harness or clothing coming in contact with abrasions of the skin. There are four types of the disease according to Dr. WHERRY'S classification —namely, acute and chronic glanders, in both of which the mucous membrane of the nares, together with the adjacent lymphatic glands and the lungs, are affected and acute and chronic farcy where the process is limited to the skin and its lymphatics. Acute glanders is the common type of the disease in man and in the mule and ass, though less common in the horse. The incubation period, here, is from three to five days, when inflammatory symptoms appear at the site of infection and there are general febrile disturbance and malaise. A day or two later the mucous membrane of both nares becomes hyperæmic and may show punctiform hæmorrhages and later small pustular nodules. There is a copious discharge from the nostrils, at first thin and watery, but later muco-purulent and even streaked with blood. In the horse the submaxillary glands become enlarged on the affected side, nodules form in the lungs, and death occurs in one or two weeks. In man there is often intense pain in the joints and muscles, and abscesses may form in them. An eruption of papules developing into pustules appears on the skin, especially on the face and over joints. These may simulate small-pox pustules and be regarded as such, as occurred in one of the cases recorded by Dr. WHERRY in his report. This form of the disease is invariably fatal, usually within eight or ten days. In chronic glanders, which is rare in man but not infrequent in the horse, the onset is insidious and the course is indefinite. In the horse there is a sticky, muco-purulent secretion from the nose associated with the deposit of greyish nodules on the nasal septum which subsequently break down to form ulcers. Similar ulceration may occur in the frontal sinuses, Eustachian tubes, and larynx, and the lungs frequently present numerous nodules. In these cases, both in man and horses, diagnosis may be only possible by bacteriological tests. In farcy the disease is usually inoculated through the skin, nodules are formed in the skin and subcutaneous tissues and these may develop into abscesses which discharge externally. The neighbouring lymphatic vessels are inflamed and swollen and along their course secondary subcutaneous nodules appear, forming the so-called farcy buds. The neighbouring lymphatic glands become involved and embolic foci may form in the spleen and other viscera. Acute farcy is usually fatal in from 12 to 15 days, while the chronic form may last for months or even years.

The diagnosis can be established by the use of mallein as we pointed out in a leading article last week on the subject This test is of the greatest value in determining the presence of infection in doubtful cases or in "contacts." In healthy horses the injection produces no effect on the temperature or general condition, although a local reaction develops of much less extent than in glanders and lasts about 24 hours. All possible care should be taken in the diagnosis of suspicious cases, as the manifestations are not always typical and it is not uncommon for a case to go unrecognised. The two cases in human subjects reported by Dr. WHERRY illustrate in a marked degree the difficulties of diagnosis which were experienced in the case recently received into St. George's Hospital. Here it may be remembered the case was originally believed to be one of pneumonia. One of Dr. WHERRY'S cases was only suspected after death, when seen by a member of the Harvard Commission on Glanders, to be a case of glanders; it had been previously regarded as one of pyæmia or of acute rheumatism or possibly small-pox; while in the second case the diagnosis was not established until just before death. The prevention of the spread of the disease can only be effected by the systematic stamping out of foci of the disease as they occur, and by the disinfection of infected yards, stables, harness, and utensils.

Wood *v.* Bailey.

THE case of WOOD v. BAILEY, heard on June 7th at the Isle of Wight county court, before his honour Judge PERCY GYE, furnishes a curious illustration of the perverted view sometimes taken by the public with regard to pecuniary responsibilities to medical practitioners. The plaintiff, Dr. G. BENINGTON WOOD of Shanklin, sued the defendant, Mr. JOHN BAILEY, a draper of the same place, for £13 10*s*.

for medical attendance upon his son. With regard to the facts there appeared to be no dispute. The defendant's son returned home convalescent from pleurisy and soon after his return suffered from a fresh attack of the same malady. The plaintiff was called to him in February, 1903, attended him until the 10th of the following April, and had at least one consultation about the case with Dr. T. A. Ross of the Royal National Hospital for Consumption at Ventnor, who approved of what was being done. On April 10th the defendant wrote to inform the plaintiff that he had decided to put the case into other hands and to have an "unfettered opinion," which he does not seem to have obtained until two days later when Dr. J. COWPER and Dr. J. A. B. HAMMOND were called in and took charge of the case. They performed paracentesis and the patient eventually made a good recovery. The plaintiff, in acknowledging the defendant's letter of dismissal, wrote that he relinquished the case with a clear conscience; and in due course he sent in a claim for his professional charges, which were nevertheless suffered to remain unpaid. When applied to for a settlement in April of the present year, and therefore two years after the termination of the attendance, the defendant not only denied his liability but said that he had been put to an expense of £200 by the plaintiff's "wrong treatment" and that he ought to have compensation instead of being called upon for payment. There was absolutely no defence. Dr. J. WARD COUSINS, Dr. ROSS, and Dr. TURNER all testified to the propriety of the plaintiff's treatment of the case; and Dr. COWPER, who superseded him, declined to criticise this treatment in the witness-box. His honour, of course, gave judgment for the amount claimed, with costs, mentioning the total absence of any evidence that the plaintiff had failed to do what was necessary and adding that it was important for the public to understand that they could not resist the payment of medical fees because the patient died or was not cured. He might have added that there was still less ground for such resistance in the fact that he was not cured within some specified time; and this, so far as we can gather from the report, was all that could be urged on behalf of the defendant.

It is sometimes not uninteresting to try to look dispassionately at the conceivable grounds of an erroneous view. Every practitioner is aware that his charges will occasionally be disputed by people who know them to be perfectly just and reasonable but who do not like to pay them and who trade on the frequent unwillingness of members of the profession to insist upon their rights. This unwillingness has its most usual foundation in the knowledge that illness is more or less a misfortune, and in a feeling resembling that of CHAUCER'S Persoun, who was "ful loth to curse for his tythes." It is strengthened by the press of daily occupations, by the "glorious uncertainty" of the law, by the possibility that a verdict may, after all, be unproductive, and sometimes, perhaps, by a consciousness that a strict insistence upon the most undoubted rights may be impolitic. On all these considerations dishonest debtors trade; but we will assume that the defendant in WOOD v. BAILEY was not influenced by them and that he was an honest man who, by some mental twist difficult of comprehension, had really persuaded himself that a medical practitioner ought not to be paid unless the friends of the patient were satisfied with his conduct of the case. He evidently recognised his perfect right to dismiss his son's medical attendant and to employ another, for he acted upon this right, if not as soon as he felt dissatisfaction at all events as soon as the feeling became sufficiently acute. The difficulty is to conceive the course of reasoning, if so it may be called, which led him to believe that his dissatisfaction, which does not appear to have been based upon any suggestion of neglect, could exonerate him from pecuniary liability for the attendance that he had already sanctioned. A medical man is bound, of course, to bring reasonable knowledge and skill to the service of his patient and a manifest failure to do this would necessarily vitiate his claim. Mr. BAILEY does not appear to have had any ground of this description. The plaintiff had called in consultation a well-known physician of the locality, whose fee was presumably paid by the defendant, and who concurred in the propriety of the treatment that was being pursued. It is true that Dr. COWPER and Dr. HAMMOND are said to have performed paracentesis and to have given exit to a collection of pus, but it was also in evidence that Dr. WOOD had previously tested the character of the fluid in the pleural cavity with the aid of an exploring needle, had found it to be serous, and had arrived at the conclusion that paracentesis was not then indicated. That it was indicated and performed on a subsequent occasion is a fact entirely irrelevant to the issue raised at the trial. Even if the question of performing it at any given time had been one as to which Dr. WOOD differed from those who succeeded him he would manifestly have been bound to act upon his own opinion and not upon theirs, even supposing that he had been made acquainted with it. Under whatever aspect we look at the defence we can attribute it to nothing else than sheer wrongheadedness.

We are entitled to suppose that Dr. COWPER, who was called for the defence and who declined to criticise the plaintiff's treatment, was an unwilling witness; and hence we must exonerate him from all responsibility for the defendant's resistance to a just claim. It would, nevertheless, be satisfactory to the profession to hear from him that he had endeavoured to prevent a defence which he must have foreseen to be futile and that he had striven to enlighten Mr. BAILEY with regard to the true nature of his position and his responsibilities. A medical man who supersedes another during the actual progress of an acute illness is placed in an extremely critical and responsible situation, and is bound, so far as may be possible, to guard the reputation of his predecessor. He is not bound to agree with him, in diagnosis, in prognosis, or in treatment; but, more especially if his opinion should appear to be justified by results, he is bound to point out the extent to which, in the given circumstances, a different view might have been entirely legitimate. The public are prone to suppose, when the erroneous character of any medical opinion or medical treatment has been shown by time, that the error must have been obvious from the first to any properly instructed person; but, if this were so, the art of medicine would be much easier than it is. No one but a practitioner can appreciate the anxieties that frequently arise from the obscurity of the conditions with which he is called upon to deal, or the

watchfulness necessary to be observed in order to miss none of the indications, veritable straws it may be, but showing the direction of the wind, by which the obscurity may at some given moment be lightened or removed. Reading between the lines of the report it seems highly probable that the defendant in WOOD v. BAILEY would try to justify himself to his own conscience by saying, "Dr. WOOD did not perform paracentesis and my son was very ill; Dr. COWPER did perform it and he recovered; therefore Dr. WOOD ought to have done it at an earlier period." Such a course of reflection might not be unnatural in an ignorant person, but it is none the less absolutely unsound; and, as regards the pecuniary liability, the phraseology of the judge leaves nothing to be desired in the way of explicitness. A person who employs a medical man is responsible for paying his proper and customary charges and cannot escape from this liability by pleading any amount of personal dissatisfaction with his conduct of the case. Absolute neglect or malpractice established by skilled evidence would place the question upon a different footing, but neither of these was even alleged as against Dr. WOOD. The profession generally are much indebted to him for his determination to insist upon receiving his proper dues; and the Medical Defence Union, by which the case of the plaintiff was conducted, has given one more proof of its signal usefulness to those for whose protection it was called into existence.

Annotations.

"Ne quid nimis."

ROYAL COLLEGE OF SURGEONS OF ENGLAND: ELECTION OF MEMBERS OF COUNCIL.

FOR the four vacant seats on the Council of the Royal College of Surgeons of England six candidates have been nominated. Two of them, Mr. Edmund Owen and Mr. Rickman J. Godlee, have already served a term on the Council and now offer themselves for re-election. There can be no question as to the propriety of reappointing them. They have both proved useful members of the Council and from their work and their position in the profession they thoroughly deserve a renewal of the confidence of the Fellows, but their election must not be taken for granted because of the unfortunate proclivity that the Fellows have for plumping. We cannot but look upon plumping as a shirking of responsibility and deplore that so many Fellows should be willing to waste their votes. If Mr. Owen and Mr. Godlee are re-elected there will remain two other vacancies, and for these, in order of seniority, the following candidates are presenting themselves: Mr. Andrew Clark of the Middlesex Hospital, Mr. C. H. Golding-Bird of Guy's Hospital, Mr. Harrison Cripps of St. Bartholomew's Hospital, and Mr. W. Bruce Clarke, also of St. Bartholomew's Hospital. Inasmuch as one of the two vacancies on the Council has been occasioned by the retirement of Sir Henry G. Howse it would be only right that Mr. Golding-Bird should be elected in his place. Guy's Hospital is a very important medical school and at present it has only one representative on the Council, Mr. R. Clement Lucas. Mr. Golding-Bird is one of the full surgeons of that institution and occupies a deservedly high place in British surgery. At a previous election he almost secured a seat. Between the three remaining candidates it is somewhat difficult to make a choice. Mr. Andrew Clark is surgeon to the Middlesex Hospital which already has two strong representatives on the Council, Mr. Henry Morris and Mr. A. Pearce Gould. A very similar difficulty confronts us when we consider the claims of Mr. Harrison Cripps and Mr. Bruce Clarke. They are both members of the staff of St. Bartholomew's Hospital and that hospital already has four representatives on the Council. With a full appreciation of the part that the school of St. Bartholomew's plays in the medical world we must confess that we think four representatives are sufficient, but we think also that two representatives are sufficient for the Middlesex Hospital. We must, however, suggest the addition of a representative either to one or the other. A consideration of the relative professional claims of the candidates does little or nothing to diminish our embarrassment, for they all hold a high place in contemporary surgery and have contributed to the literature of the science. We acknowledge that the claims are well balanced, but only one of the three has hitherto manifested any special interest in College politics. Mr. Bruce Clarke had much to do with the Association of Fellows a few years ago and for a time he was secretary and this fact gives him an additional claim on the suffrages of those Fellows who are interested in the well-being and the progress of the College. We venture therefore to think that the vacant seats would be best occupied by Mr. Edmund Owen, Mr. Rickman Godlee, Mr. Golding-Bird, and Mr. Bruce Clarke.

"THE ACCURSED KNIFE."

"THE phrase," writes an Italian correspondent, "is Antonio Gallenga's, who lost no opportunity of impressing on his compatriots the urgency of a radical reform in their penal code if they were not to maintain that 'sinister priority' in homicide which has made them a by-word among the nations. Amid the universal horror at the assassination of the Hellenic Premier there was one note of consolation in Italy that 'the assassin this time was not an Italian'—though his victim's rank, his methods, and the instrument he employed seemed to favour the presumption that he must have hailed from the 'classic land of homicide,' or, at least, have qualified in the school of Caserio, of Luccheni, and of Bresci, the assassins of President Carnot, the Empress of Austria, and King Umberto. The Italian press, in the day now passing, is once more in 'full debate' on the gruesome topic of the 'Codice Penale e le Coltellate' (the Penal Code and Stabbing Cases), welcoming every aid to its discussion, even from outsiders, and giving particular attention to the article in the *Rassegna Nazionale* by Sir Willoughby Francis Wade, sometime a leading consultant in the Midlands and President of the British Medical Association. Sir Willoughby Wade, in his Tuscan *villeggiatura*, has for some years been studying the topic and in a previous article in the same periodical threw out, with practical English sense and the impartiality born of 'detachment,' a series of suggestions embodied in the Bill for penal reform promised last spring by his Excellency Signor Ronchetti, Minister of Grace and Justice, in concert with the Prime Minister and the Minister of the Interior. That article dealt mainly with the lethal weapon employed and wound up with practical indications as to the form of knife which might be exclusively permitted for sale under Government sanction and be legitimately carried by its owner. The article now under notice takes cognisance of the penalties attaching to the wounds inflicted and concludes with another series of suggestions not less practical, as the promoters of the Bill will doubtless find in its committee stage. These are too elaborate and too detailed for enumeration or discussion here but their acceptance or application will be

effective and salutary only in the degree in which certain ethnographic and historical conditions are realised and allowed for by the Legislature. 'Italians,' says Sir Willoughby Wade, 'are of an impressionable and ardent temperament, qualities which are not without their redeeming side. But *corruptio optimi pessima*, and all of us have the defects of our qualities. It is due, in part at least, to this temperament that "vendetta" is so deeply rooted in Italy'—a 'vendetta' of a kind for which the knife is peculiarly adapted. Baron Garofalo, professor of criminal statistics in the University of Naples, attributes the prevalence of vendetta to an ineradicable distrust of the impartiality of the law—a distrust all too closely connected with the miserable remuneration allowed by the State to the heads of tribunals—and to the consequent suspicion of venality and the temptation to 'take the law into one's own hand.' The same authority, in a memorable paper, illustrated the helplessness of 'education' to antagonise this 'vendetta'—in which he has the support of Sir Willoughby Wade, who points out that education in Italy, though leaving much to be desired, has, on the whole, reduced the numbers of the *analfabeti* (absolutely unlettered), while stabbing cases, fatal or non-fatal, are officially declared to be on the increase. The abolition of capital punishment, universal throughout Italy for 30 years, is now being reluctantly admitted to have coincided with an augmentation of *fatti di sangue* (cutting and wounding with fatal result) and it is even recommended in certain quarters that, as an initial remedy at least, flogging, which stamped out the garrotter in the British Isles, might be tried in Italy towards minimising such *fatti*. The whole subject bristles with difficulties, insomuch that a commission to consider it and devise measures *ad hoc* seems to be the first step indicated for the remedy of a state of things which is becoming, in the words of an Italian, a 'European scandal.' Such a commission should be composed of experts in which medicine as well as law and practical legislation should be represented, dealing as it must with details in which the expert in anatomy, surgery, psychology, criminal psychiatry, jurisprudence, criminology, and even the steel industry, can alone be heard with advantage. Signor Ronchetti, honourably associated with the reform of the penal code, might earn further distinction by organising such a commission, 'which,' concludes Sir Willoughby Wade, 'I have great confidence will one day be set on foot.' *Quod felix faustumque sit.*"

THE DEVELOPMENT AND SUSPENSION OF THE JAWS.

IN an interesting paper communicated to the Transactions of the Odontological Society (Vol. XXXVII., No. 5) Mr. J. T. Carter gives the results of his investigations into the development and suspension of the jaws. Mr. Carter's research has been mainly in connexion with fish and reptiles and shows much careful and thoughtful work. At the commencement of his paper he points out that all anatomical investigation to be of value must be based on the evidence of comparative anatomy. Adult skulls of members of each family must be examined and compared but unless this method is associated with an embryological examination of certain species the investigator is liable to be misled by analogies due to convergence of types. Also he should never consider that similarity of gross structure implies community of origin until the embryology of the creatures under consideration has been carefully worked out. With the assistance of a large number of slides and specimens it is shown that the first elements of a skull to appear are a pair of curved flat rods—the parachordals—which abut on each side of the anterior end of the notochord. Anteriorly to the parachordals another pair of cartilaginous rods appear—the trabeculæ cranii. The parachordals and the trabeculæ eventually fuse with the anterior end of the notochord to form a floor for the support of the brain. Three pairs of sense capsules—olfactory, optic, and auditory—next appear and as the sides of the basilar plate grow upwards to invest the brain these capsules enter into intimate relation with the primitive brain case. In addition to the above structures a number of cartilaginous rods, formed in the walls of the pharynx between the gill slits, must also be considered as part of the skull. The anterior pairs of these rods, though primarily connected with the respiratory function, become modified to assist in the prehension and comminution of food and so form jaws. In the selachians all these elements are practically distinct but ascending the vertebrate scale it is found that they enter into closer relation with each other until in the higher animals all are intimately blended. In the elasmobranch fishes the skull consists only of cartilage the perichondrium of which may be hardened by superficial ossification taking place therein. In recent forms there are no true bones. True bones first make their appearance in the cartilaginous ganoids where is seen superficial ossification on, or just beneath, the surface. In sturgeons, polypterus, and so on, these bones do not enter into close relation with the cartilaginous skull. Dermoid ossification appears to affect the underlying tissues and to stimulate a corresponding ossification in the perichondrium, the differently derived bones more or less fusing together. Dr. Ridewood[1] has recently pointed out that there is no essential difference in the two methods and that dermal ossification, whether due to coalescence of denticles or to hardening about sensory canals, was the primitive form. Even in those cases where the bone is pure cartilage bone the ossification of the cartilage owes its origin phylogenetically to a predisposing dermal ossification which no longer appears in ontogeny. So, in the teleostei, there are both ectosteal and endosteal ossification. In the physostomi the ectostoses are still separable from the chondrocranium with its endostoses, but in the remaining orders the investing bones become very closely united. Mr. Carter then shows that from this point upwards in the phylum, through dipnoi, urodela, anura, reptilia, and mammalia, there is a gradual replacement of the primitive cartilaginous cranium by the secondary osseous cranium and that the same applies to the jaws and branchial arches; that the cessation of branchial respiration led to a reduction of the visceral skeleton and that the disused parts were largely utilised in the elaboration of the organ of hearing. In conclusion stress is laid on the great importance of a thorough application of the lessons gained from the comparative consideration of the morphology of the jaws in the treatment of various abnormal conditions which nowadays the dentist is so often called upon to rectify; for the effect of heredity extending back to remote ancestors (how remote the most ardent evolutionist can scarcely realise) is probably far more potent in the causation of variations than is the influence of factors which have only been at work for a few generations.

THE EMPLOYMENT OF CHILDREN.

UNDER the Employment of Children Act, 1903, the London County Council has drawn up a set of by-laws which have been submitted to the Home Secretary for confirmation as required by the Act. These by-laws, which are intended to safeguard the moral and physical well-being of children, can be obtained from the clerk to the council and they deserve the serious consideration of all who appreciate the important bearing which the matter has upon future generations. Some objections having been raised to them the Home Secretary has issued a notice announcing his decision that a public inquiry shall be held into the proposed

[1] Proceedings of the Zoological Society, 1904.

regulations and Mr. Chester Jones, a barrister, has been appointed to hold the inquiry at the County Hall, Spring Gardens, London, S.W., on Monday next, June 26th, at 11 A.M. On the whole the by-laws seem to us wise and temperate, though there is perhaps some ground of objection to the first, which states that a child under the age of 11 years shall not be the subject of any employment. This may mean some hardship to the very poor, but although the tiny runners of errands may not be asked to do anything beyond their powers children ought not to be looked upon as bread-winners. The by-laws relating to street employment by persons under the age of 16 years should go a long way towards bettering the condition of kerb-merchants and of preventing these young people from being exposed to many of those evils which street trading necessarily implies.

RED RUBBER.

IN a letter published in THE LANCET of June 10th, p. 1610, Mr. F. A. Pond drew attention to the fact that sulphide of antimony is an important constituent of red rubber and he produced certain evidence which in his opinion lent colour to the view that there was possibly a connexion between the use of red rubber rings in the stoppers of mineral water bottles and appendicitis and other intestinal disorders. It is not the first time that an indictment against red rubber has been made and the fact that it contained sulphide of antimony was discussed at a meeting of the Royal Medical and Chirurgical Society in 1876[1] in connexion with tracheotomy-tubes. As far back as 1879 some correspondence appeared in the pages of THE LANCET[2] "On Effervescing Drinks and their Effects," in which one writer asserted that acetate of lead was used in the preparation of indiarubber bands for mineral-water bottles and he was of the opinion that some children had been unwell from drinking lemonade from these bottles. In a letter by another writer the use of acetate of lead was denied and in an editorial note to this letter it was stated that "we, too, have made several analyses of them—i.e., vulcanised rubber bands—and in no case have we found even a trace of lead to be present." The vulcanisation of rubber with sulphide of antimony is carried out on a large scale, and every piece of red rubber which we have examined—including rubber bands, washers, tubing, and rings—proved to contain this substance. According to our analysis the average amount was 16·83 per cent. of penta-sulphide of antimony, which is equivalent to about 10 per cent. of metallic antimony and 1·94 per cent. of sulphur in addition to that combined with the antimony. We could find no zinc nor could a trace of arsenic be detected in the sulphide. As to the possibility of mineral waters exerting any appreciable solvent action on the sulphide of antimony we think this is improbable as, excepting by the aid of hot strong acids or strong alkali, sulphide of antimony is with difficulty soluble. However, in order to clear up this point a number of experiments were made in which soda-water (containing sodium bicarbonate), potash water (containing potassium bicarbonate), lemonade (containing citric acid or tartaric acid and sugar), and beer were left in contact with rubber rings containing 16·83 per cent. of penta-sulphide of antimony. The test was somewhat severe as the liquids were shaken vigorously and frequently in contact with a large surface of red rubber and they were left for four days. On testing the liquid for antimony not a trace could be found. Nor was any soluble antimony found in a number of specimens of mineral waters contained in bottles provided with red rubber rings. In some instances, however, small specks of rubber were found in the liquid and the rings showed decided signs of wearing away. This effect of constantly turning the stopper on the rubber ring would, of course, be the same on other materials free from antimony, as, for example, grey rubber, cork, wood, and so on. The question remains whether if these pieces of detached antimonial rubber were swallowed they would set up an irritating action in the direction indicated. Chemically speaking, it is difficult to dissolve the sulphide of antimony out of red rubber. Prolonged treatment in hot strong alkali or acid will, of course, effect solution and will take out some sulphur, but physiological reagents are neither hot nor concentrated. And even if the red rubber were disintegrated the amount of antimony would be small, since it does not exceed, according to our analysis, 10 per cent. of the metal and the wearing away of the ring in the aerated water bottle is spread over a long time. Still, the use of a mineral compound containing an undoubtedly poisonous metal is always undesirable, even in small quantities, when articles of food and drink are concerned and the conviction that no harm is likely to ensue in such cases can only be carried home by doing away altogether with the suspicious component.

[1] THE LANCET, Dec. 2nd (p. 785) and 30th (p. 943), 1876.
[2] THE LANCET, August 9th (p. 225) and 30th (p. 337), 1879, and Sept. 20th (p. 449), 1885.

THE "FAKING" OF HIGH TEMPERATURES.

OF the value of the thermometer in clinical medicine there can be no question. Before the utilisation of the thermometer in practice some idea could be formed of the temperature of the patient by palpation but to be able to estimate exactly the degree of increase of temperature was an enormous step and, moreover, in some conditions, as in the cold stage of malaria, the sensation communicated to the hand of the physician is a very fallacious guide to the temperature of the patient. The great trust, however, which is placed in the indications of the clinical thermometer is not always justified, for patients have found that it is by no means difficult in one way or another to induce a thermometer to indicate a far higher temperature than that of the body. The motives for these deceits are various. Sometimes it is to obtain treatment as an in-patient of a hospital; sometimes it is merely to excite notice or sympathy, while in other cases the sole motive is to contribute to the amusement of the patient himself. The excitement caused in a ward by the occurrence of a temperature of 106° F. or even higher is not likely to be forgotten by any patient present at the time, and many patients will wish to emulate this achievement. The means by which a thermometer is induced to indicate a pyrexial temperature are numerous. The simplest is the utilisation of hot food. A cup of tea will send the mercury upwards in a rapid and surprising manner, and even hot potatoes or pudding will be equally efficacious. A poultice, too, or a fomentation will serve the purpose, and a hot water bottle has also been requisitioned. This is the easiest method and will suggest itself to the veriest tyro. The next mode that may be mentioned utilises the effects of friction. If a clinical thermometer be grasped firmly near its lower end and the bulb rubbed smartly on any texture—flannel is the most suitable material—the mercury will soon rise and, indeed, the bulb may become too hot to be pleasant. This method puts a good deal of strain on the constriction just above the bulb and the thermometer is likely to give way there. In some instruments the mercury can be thrown up the scale by an energetic jerk but this should never deceive an observant physician, for there will be a very obvious break between the constriction and the lower part of the mercurial column. The desire for thermometers which act rapidly has necessitated the production of instruments the bulbs of which have very thin walls. In these thermometers it is possible by pressure very carefully adjusted to compress the bulb to a minute extent, causing a small portion of the mercury to

leave the bulb and to pass into the tube, so that a high temperature is indicated. Malingerers exert this pressure chiefly by means of the teeth and therefore this method works best when the temperature is taken in the mouth. The pressure required is not great when the thermometer is suitable. In some very thin subjects it seems possible that even an axillary temperature can by pressure be made to appear unduly high. These are the methods by which pyrexial temperatures can be "faked" and it is necessary for the physician to be on his guard against them. We do not venture to say that all the cases of very high temperatures, such as 115°, 120°, 125°, and even higher, that have been recorded are fraudulent, but we have no hesitation in declaring that in the vast majority of cases there has been fraud. It is often exceedingly difficult to detect, but it is always possible, if sufficient care be taken, to demonstrate that the thermometric readings are untrustworthy. The most important point is to have several thermometers; one in each axilla, one in the mouth, and one in the rectum. If these all give widely divergent readings it is clear that fraud is being employed. In many conditions, such as hemiplegia, there may be a well marked difference between the temperatures taken in the two axillæ, and this has to be borne in mind, but a marked divergence between the results will infallibly point to deceit. The rectal temperature is by far the most trustworthy, but for absolute certainty the thermometer must be held in position the whole of the time. Should it occur to any of our readers to experiment in the direction of "faking" high temperatures we would suggest the desirability of laying in a good supply of thermometers, for some are sure to be broken. The pressure method is especially fatal.

ACUTE OBSTRUCTION OF THE DUODENUM IN POTT'S DISEASE OF THE LUMBAR SPINE.

IN the *Archives Générales de Médecine* of March 14th Dr. Gaussel has published a case in which Pott's disease of the lumbar spine led to the formation of an abscess behind the duodenum and acute obstruction of that organ—a complication which does not seem to have been recorded previously. A man, aged 46 years, was admitted into hospital under the care of Professor Grasset in August, 1903. Since 1890 the patient had suffered from attacks of bronchitis accompanied by hæmoptysis. In front on the left side the chest was hyperresonant, expiration was prolonged, and there were numerous sibilant râles; on the right side at the apex there were dulness and subcrepitant râles. Behind auscultation gave the same signs. The cardiac dulness was absent and the heart sounds were masked. There was no pyrexia. Chronic bronchitis, emphysema, and tuberculous softening of the right apex were diagnosed. The sputum contained tubercle bacilli. The patient quickly improved and was able to get about and make himself useful in hospital. But in October he complained of pain in the lumbar region which impeded walking and caused him to curve his body to the right. The pain radiated into the left flank and was increased by pressure on the spine at the level of the fourth lumbar vertebra. There was no projection of the spine and radioscopy was negative. The pain persisted in spite of local applications and was not relieved by rest in bed. Indeed, it seemed to the patient to be increased when he lay on his back. At the beginning of December the pains still persisted and there was further weakness of the legs in walking, which was always performed with the trunk curved to the right. On Dec. 4th examination revealed slight atrophy of the left lower limb; Babinski's sign was not present. There was paresis of the flexors of the thighs on the pelvis, for the patient could not raise himself to the sitting posture without the aid of his arms. The presence of this paresis and of the pain at the level of the fourth lumbar vertebra pointed to pressure within the spinal canal on the cauda equina. Tuberculous meningitis at this spot was thought of, for the negative result of radioscopy seemed to exclude caries. Under rest in bed improvement took place and the patient was able to leave hospital in April, 1904. The paresis had not progressed and he could walk better. On June 16th he was readmitted suffering from profuse hæmoptysis and dyspnœa. The hæmoptysis seemed to come from the right apex where there were signs of great congestion. On the left side there was generalised bronchitis which tended to invade the small bronchi. The evening temperature was 101·3° F. On the 20th he complained of acute abdominal pain and vomited a large quantity of greenish liquid containing much bile. The pain was situated in the right hypochondrium and was spontaneous but increased by attempts at palpation. There was also hiccough. The vomiting was continuous; all liquids taken were rejected mixed with bile after a short sojourn in the stomach and injections of morphine and heroin pills had no effect. Duodenal obstruction below the ampulla of Vater was suggested. On the 23rd the vomiting persisted, the pain was always acute, and incessant hiccough exhausted the patient, who lay helpless in his bed. Only nutrient enemata and injections of morphine were given. On the 24th the vomiting had ceased but the pain was always acute and the hiccough continued. On the 26th milk could be taken by the mouth but the hiccough persisted. The patient became weaker and died from the thoracic disease on July 1st. It was thought that the duodenal obstruction was due to tuberculous peritonitis localised in the neighbourhood of the duodenum. The necropsy showed great congestion of the lungs. At the right apex was tuberculous softening; the lung was full of small tubercles surrounded by fibrous tissue. There were no signs of peritonitis, but behind the duodenum, in connexion with the fourth lumbar vertebra, was a chronic abscess of the size of a large walnut. The spinal membranes were normal. The abscess contained tuberculous pus and communicated with a cavity in the fourth lumbar vertebra. A probe was passed into the latter and on slight pressure it perforated the thin barrier of fibrous tissue which separated the abscess from the spinal canal. Although the meninges and nerves at this spot appeared normal microscopical examination showed the existence of neuritis. Dr. Gaussel thinks that the duodenal obstruction was due to spasm provoked by the abscess.

THE PIETERMARITZBURG LABORATORY.

THE annual report of the Government bacteriologist and director of the Pietermaritzburg Laboratory for the year ending in December, 1903, serves to show that in matters affecting the public health at least we can not only "think imperially" but can convert our ideas into labours for the good of the empire. The establishment of such laboratories as this at Pietermaritzburg is primarily intended for the benefit of the colonies in which they are situated, but the work done in them has a far greater area of usefulness. The director, Mr. H. Watkins-Pitchford, reports the growing use made of the laboratory by the health and veterinary departments, the private practitioner, and by the criminal investigation departments. The routine work consists in examinations for the diagnosis of enteric fever, diphtheria, malaria, &c., the analysis of water-supplies, and the preparation and supply of some half-dozen varieties of vaccine. Of the vaccine for quarter evil alone some 17,000 doses were distributed during the year. In addition to the routine work a very valuable bacteriological investigation of plague in Natal in 1902–03 was undertaken. The morphology and vitality of the bacillus pestis as met with in this epidemic were carefully studied. The report is lavishly illustrated with reproductions of excellent photographs and forms a very complete

account of the variations in morphology produced by alterations in the composition of the media employed and changes in other cultural conditions. A valuable series of experiments was undertaken to control the important results obtained by Professor W. J. Simpson at Hong-Kong, which showed the possibility of the infection of many varieties of domestic animals by the ingestion of infectious food. The results obtained in Natal were very different from those obtained in Hong-Kong and agree with the earlier observations of French investigators. It was found practically impossible to infect South African herbivora, pigs, and birds. The director is to be congratulated on the issue of this excellent report.

THE THAMES STEAMBOATS.

THE London County Council has done many things; for some of which it has been heartily praised and for others equally heartily condemned. Its latest venture, however, can, we imagine, meet with few detractors. Anything which encourages Londoners to know their own river well deserves warm approbation and anything which serves to relieve their over-congested roads perhaps even warmer praise. A steamboat service which is likely to meet both these ends to a large extent is therefore an achievement on which the Council may be cordially congratulated. It is a truism that those who inhabit fine towns rarely know the fine sights of their own city so well as the occasional visitor does. They do not set about seeing these things, knowing that they are always at hand. Thus it happens that there are thousands of Londoners who have never realised all that there is which appeals to the eye and to the imagination that can be seen in a trip from Greenwich to Battersea even. Such ignorance should now no longer remain possible. From the hygienic point of view as well as from the artistic there is much to be said for the river-way. And the business man or clerk who is fortunate enough to be able to reach his daily destination by water has a boon that is denied to him who travels in a crowded carriage on the Metropolitan or the Tube railway. The air is fresh on the water even though that water runs through the midst of a mighty city.

RADIUM AND VITALITY: "RADIOBES."

CONSIDERABLE publicity has been given in the lay press this week to the results of a remarkable series of experiments made in the Cavendish laboratory at Cambridge by Mr. John Butler Burke on the spontaneous action of radioactive bodies in gelatin media. The first account of these experiments appeared in a signed letter published in *Nature* of May 25th, and in this account the writer promised more details "shortly," but so far as we know no further communication has been published. Briefly the experiment consisted in placing radium salts in sterilised gelatin culture, care being taken to sterilise both the salt and the broth before commencing the experiment. After 24 hours or so in the case of the bromide and about three or four days in that of the chloride a peculiar culture-like growth appeared on the surface and gradually made its way downwards until after a fortnight in some cases it had grown fully a centimetre beneath the surface. The controls showed no growth whatever. At first sight on microscopical examination the growth appeared to be due to microbes but as they did not give subcultures when inoculated in fresh media they could scarcely be bacteria. Their presence would appear to be due to the spontaneous action of the radium salt upon the culture medium and not solely to the influence of anything which previously existed therein. Mr. Burke concluded after a careful and prolonged examination of their structure, behaviour, and development that they are highly organised bodies, although not bacteria, and that they arose in some way from the action of the invisible particles of radium. He has proposed to give these bodies the name of "radiobes" as indicating their resemblance to microbes as well as their distinct nature and origin. It has been suggested that they are, after all, crystals, but Mr. Burke is confident that they are not of the nature of crystals. Whilst admitting the extreme interest of these results the evidence that gelatin culture has been vitalised by purely physical and inorganic agencies, that life has been established out of inanimate materials, is not at the present stage of the experiment convincing and further results will be awaited before the opponents of the "spontaneous theory" may be induced to abandon their position.

THE MEDICAL OFFICER OF HEALTH OF THE GLOUCESTERSHIRE COMBINED SANITARY DISTRICT.

A CONFERENCE of representatives of the urban and rural districts comprised in the Gloucestershire combined sanitary district, convened at the request of the Local Government Board, was held at Gloucester on June 19th. The object of the meeting was to consider the present position, in view of the recent action of the Chipping Sodbury council, in reference to the appointment of medical officer of health. All the councils in the combined district were represented with the exception of Chipping Sodbury. Motions favouring a continuance of the combination were adopted, reference was made to the length of time of Dr. F. T. Bond's services and to the efficient manner in which he had carried out his duties, and the Chipping Sodbury council was urged to reconsider the matter.

CHILDBED MORTALITY.

IN a paper on the Mortality of Childbed read before the Obstetrical Society of London Dr. Robert Boxall compared the records of the York-road Lying-in Hospital and those of the Registrar-General for London, England and Wales, Scotland, and Ireland.[1] The conclusions at which he arrives are interesting. In spite of the large number of severe cases sent in the death-rate in the hospital is much lower than that recorded in the Registrar-General's returns. Both with regard to the accidents of childbed and septic diseases the hospital death-rate is less than that of private practice. If the mortality of childbirth for the last 25 years in the hospital and that for the last three years for which figures are available in England and Wales are compared the ratio is as 3 to 4. During the last 16 years only four fatal cases of septic disease, all introduced from without, have been treated in the hospital. Dr. Boxall in calculating the death-rate has based it upon the number of registered births and from his statistical studies draws the following conclusions. The total death-rate from childbirth has not diminished in England and Wales, in Scotland, or in Ireland, where it is abnormally high as compared with the other divisions of the kingdom, but in London it has declined considerably. The death-rate from the accidents of childbirth has declined slightly in each division of the kingdom but is abnormally high in Ireland and in London has markedly diminished. The death-rate from puerperal septic diseases has, if anything, shown a tendency to increase in each division of the kingdom but in London has been declining for at least the last decade. It is most interesting and encouraging to note that the total death-rate in these cases is diminishing in London and we may justly draw the conclusion that the stricter training of both students and nurses is at last bearing some fruit. No doubt

[1] THE LANCET, May 13th, 1905, p. 1269.

in Ireland the ignorance of the midwives and the difficulty of obtaining proper medical attendance are both very great and this may well explain the abnormally high death-rate prevalent in that country. We may certainly hope that in another ten years' time, when the influence of the new Midwives Act begins to make itself felt, the death-rate not only in London but all over the kingdom will show signs of a steady decrease. In view of the very high death-rate in childbed which Dr. Boxall has shown to prevail in Ireland it is all the more to be regretted that the new Act does not apply to that country.

A MEMORIAL TO THE LATE DR. GEORGE VIVIAN POORE.

WE have much pleasure in announcing that it is proposed to place a memorial in University College Hospital to Dr. George Vivian Poore who died in October, 1904. For 30 years he was on the hospital staff as assistant physician and physician and at University College he was for nearly 20 years professor of medical jurisprudence and afterwards professor of medicine. His distinguished services to the hospital and medical school, his personal merits, and the practical value of his literary work justify an appeal to his numerous friends and old pupils to establish a permanent memorial of him. If a sufficient sum is collected a bed in the hospital will be named after him, as was done in the case of his friend, the late Mr. Marcus Beck, and a medallion portrait will be placed in some appropriate position. The necessary arrangements are being made by a large committee, consisting of past and present members of the hospital staff, together with the Right Hon. Lord Reay, President of University College, the Right Hon. Lord Monkswell, vice-president of University College and treasurer of University College Hospital, Sir Richard Farrant, treasurer of University College, Dr. T. Gregory Foster, principal of University College, and Mr. Henry Lucas, chairman of the hospital committee. Dr. Sidney Martin is the secretary to the committee. Subscriptions may be sent to the treasurer, Mr. R. J. Godlee, F.R.C.S. Eng., 19, Wimpole-street, Cavendish-square, London, W.

RECURRING SUBLUXATION OF THE FEMUR AFTER INJURY.

IN the *New York Medical Journal* of June 3rd Dr. P. Le Breton has published an important case in which recurring subluxation of the femur followed an injury which he regards as "incomplete fracture of the neck of the femur" but which probably would be more correctly described as impacted fracture. A girl, aged 15 years, was seen on Nov. 17th, 1903. 14 months before she had fallen on the left hip in the street. Although in considerable pain she was able to walk home. She did not go out for three weeks but limped about the house. After the injury she always walked with the leg and thigh flexed and stepped on the ball of the foot, rotating the leg slightly outward. After the three weeks she began to go to school again. She complained of slight pain which was relieved by adopting the attitude described for walking. Five months later she received a push from another girl which strained the hip and increased the pain. For the last three months she had noticed on attempting to extend the thigh while in the upright position a sudden jerk or slip at the hip which caused sharp pain. On examination she was found to be a well-developed, strong girl. While standing or walking she kept the thigh and leg somewhat flexed and the heel off the ground. There were slight outward rotation of the limb and prominence of the great trochanter. On lying down the limb was easily placed in a normal position but on rising the deformed position was immediately assumed. On attempting forcibly to straighten the thigh in the upright position the trochanter suddenly moved forward and became less prominent. It seemed as if the head of the femur slipped into its socket over the edge of the acetabulum or an abnormal ridge. A fulness could be felt under the gluteal muscles which disappeared as the slipping occurred. The sensation resembled that produced on reducing a congenital dislocation. Voluntary muscular spasm resisted every movement of the thigh but there was no limitation of motion. The left leg was three-eighths of an inch longer than the right, which was probably due to overgrowth. Slipping of the bone did not occur in the prone position. A skiagraph showed thickening of the neck of the femur and diminution of its angle but not enough to give rise to the symptoms of coxa vara. As the parts were in a normal position when the patient was recumbent a modification of Lorenz's treatment was advised. A plaster-of-Paris bandage was applied in this position to fix the leg in place until the tendency to subluxation was overcome. To prevent the patient from assuming her old position it was found necessary to extend the plaster from the lower ribs to the ankle. She walked well without pain and brought the sole to the ground for the first time in over a year. After three months the plaster was removed and she walked normally except for a limp which later disappeared. There was no tendency to subluxation and the slipping movement could not be reproduced. All the movements of the hip were normal but the knee was stiff from its confinement. Some months later recovery was complete. Dr. Le Breton thinks that the accident caused an incomplete fracture of the neck of the femur which nature repaired and that to favour repair the girl adopted a position which resulted in stretching of the capsule of the hip-joint and finally in subluxation, so that on standing the head of the femur was not in the acetabulum. But it seems more probable that the injury involved the capsule as well as the neck of the bone and that some tear in the former was the cause of the subluxation.

VOYAGES D'ÉTUDES AUX EAUX MINÉRALES.

THE annual "voyage" of medical men and students will this year comprise the most important stations in the Western Pyrenees. It will start from Luchon on Friday, Sept. 1st, and will terminate at Arcachon on Thursday, Sept. 14th. The price to be paid, which includes everything between these two places, is £12. There are no extras of any kind. The travelling is by first-class special train and the accommodation is the best which each place has to offer. In order to reach Luchon a ticket (first- or second-class) at half-price will be issued from any selected point on French territory and a similar reduction will be made on the ticket from Arcachon to the point of departure from French territory. The district to be visited is remarkable for its extreme beauty and interest as are the stations for their therapeutic value. Among them are such well-known resorts as Luchon, Cauterets, Saint-Sauveur, Eaux Bonnes, Pau, Biarritz, Dax and Arcachon, together with many of minor importance. The particular features of each place are briefly described by Dr. Landouzy, professor of clinical medicine at the University of Paris. Medical men (who may be accompanied by their wives), medical women, and students in medicine are eligible to take part in the trip. Names must be sent in so as to reach Paris on or before August 15th. They should be accompanied by the subscription (£12) which may be in the form of an ordinary English cheque payable to Dr. Carron de la Carrière, 2, Rue Lincoln, Paris, or to Dr. Leonard Williams, 8, York-street, Portman-square, London, W., from either of whom any further particulars may be obtained. Dr. Boyd B. Joll

writes to us to say that Luchon may be reached *viâ* Bordeaux by the General Steam Navigation Company's boat which will leave London on Saturday, August 26th, and which will return to London on Sept. 19th, but those wishing to proceed to Luchon *viâ* Paris will be able to cut the trip shorter by about five days.

THE FRENCH HOSPITAL.

OUR London contemporary, *La Chronique*, gives an excellent account of the French Hospital in London and the convalescent home at Brighton. The former is still further to be enlarged, as the committee, through the energy of M. Pondepeyre, the secretary, has been fortunate in acquiring the freehold property adjoining, so that when the new addition is completed it will occupy the whole block situated between the present site and the junction of Shaftesbury-avenue with Great St. Andrew-street. A large addition has been made to the convalescent home which is now completed and is to be opened by the French Ambassador. The annual banquet was held two weeks ago and in spite of the present financial depression the sum of £3600 was collected for the benefit of the charity. The Ambassador proposed the toast of "Le Corps Médical" and in thanking him on behalf of his colleagues Dr. George Ogilvie concluded by referring as follows to the hospitality which they had received in Paris: "Cette fête fut splendide, et nous fûmes reçus avec une hospitalité toute Française. Que dire de plus!"

EXPERIMENTS ON LIVING ANIMALS.

A RETURN showing the number of experiments performed on living animals during the year 1904 has been issued as a Parliamentary paper. In addition to the reports of the inspectors for England and Scotland and for Ireland, appointed under the Act, it contains lists of registered places, the names of licensees who performed experiments and of those who, though possessing certificates, did not perform experiments, and the number and the nature of the experiments. The total number of experiments performed in England and Scotland, both with and without anæsthetics, was 32,562, being 13,478 more than in 1903, the principal increase being in the number of simple experiments, such as inoculations, hypodermic injections, and some few other proceedings performed without anæsthetics. In Ireland there were 155 experiments which were for the most part inoculations or injections. Only 11 were of a physiological and 11 of a pathological nature. As the certificates differ in their nature and many licensees hold more than one certificate it is to be expected that there should be an occasional error of judgment on the part of the licensees but only the following cases occurred in England and Scotland while in Ireland there was none:—

1. A licensee, who held Certificate A for the performance of inoculation experiments without anæsthetics, made injections into two rabbits under a local anæsthetic. 2. A licensee, who held the necessary certificate, made injections into guinea-pigs for testing samples of milk at a registered place for which his licence had not been made available. 3. A gentleman, whose licence expired on Feb. 29th, performed ten inoculation experiments on mice before his licence was renewed. 4. A licensee, who held a certificate entitling him to perform eight such experiments, made inoculations for the purpose of diagnosis from eight cases of suspected disease into 17 rabbits. These must be counted as 17 experiments, in accordance with the principle laid down by the Secretary of State that the number of animals used shall not exceed the number of experiments allowed.

In each of the divisions of the United Kingdom the report states that the animals were always found to be suitably lodged and cared for, while the licensees acted in every way in accordance with the letter and spirit of the Act.

THE annual prize-giving of the London (Royal Free Hospital) School of Medicine for Women will take place on Thursday next, June 29th, at 4 P.M., when Mr. H. T. Butlin will present the prizes. The annual distribution of prizes to the students of the Medical School of St. Mary's Hospital will take place on the same day at the same hour. The prizes will be distributed by Sir John Gorst. The distribution of certificates and prizes at King's College, London, will be made by the Rev. James Gow, Litt.D., Headmaster of Westminster School, on Wednesday, July 5th, at 3 P.M. The museums and laboratories will be open to visitors.

THE Epidemiological Society of London will celebrate the fifty-fifth anniversary of its foundation on Friday, June 30th, when the annual dinner will take place at the Grand Hotel, Trafalgar-square, London, at 7.15 P.M. The President, Dr. B. A. Whitelegge, C.B., His Majesty's Chief Inspector of Factories, will take the chair.

THE Bishop of Ripon, chairman of the executive committee of the proposed National League for Physical Improvement, will give a dinner, "to meet the members of the League," at the Hotel Cecil, Strand, London, to-day (Saturday) at 7.30 for 8 P.M.

WE deeply regret to announce the death of Professor Mikulicz, the celebrated Austrian surgeon, at the comparatively early age of 55 years.

THE ARMY MEDICAL REPORT FOR 1903.[1]

FIRST NOTICE.

WE congratulate the Director-General of the Army Medical Service on having to submit to the Secretary of the Army Council a favourable report, which has just been published, on the health and the sanitary condition of the army for the year 1903. The report is a full and voluminous one and, as usual, includes records of the health of every home and foreign station where troops are serving.

If we remember aright it was Anthony Trollope who, regardless of the first principle of statistical science, jocosely remarked that he did not believe any statistics above six. And notwithstanding that statistical safety is only to be found in large numbers it must be confessed that to the general reader statistical reports—and these annual volumes are necessarily largely made up of statistics—can scarcely be regarded as a pleasant and diverting form of light literature. Still, there is much interesting information concerning the health of troops serving at home and abroad which can obviously only be obtained in this way. It is therefore necessary to deal with it and we shall strive to do so as succinctly as practicable and in close adherence to the report itself. In the first place, then, and as a broad, bald statement of fact, the average strength of European troops serving at home and abroad in 1903 was 242,182 warrant officers, non-commissioned officers, and men. The total number of admissions to hospital was 183,598, the total deaths were 1881, and the total number of men finally discharged from the service on account of disease and injuries was 4922. The admissions represent a ratio of 758·1 per 1000 of strength; the deaths one of 7·13 per 1000 on a strength of 263,888, which includes detached men not shown in the returns received. These ratios compare very favourably on the whole with those of the preceding year and with those for the decennial period from 1893 to 1902.

The troops serving in the United Kingdom in 1903 numbered 110,565. The admission, mortality, and constantly sick rates were 586·9, 3·41, and 35·23 per 1000 respectively. The report states, as in our opinion it is quite warranted in doing, that the admission-rate, seeing that the returns include all classes of sickness, both mild and severe, compares favourably with that of other armies, while the death-rate cannot be regarded as excessive

[1] Army Medical Department Report for the year 1903. Vol. XLV. London: Printed for His Majesty's Stationery Office by Harrison and Sons, St. Martin's-lane, printers in ordinary to His Majesty. And to be purchased, either directly or through any bookseller, from Wyman and Sons, Limited, Fetter-lane, E.C.; Oliver and Boyd, Edinburgh; E. Ponsonby, 116, Grafton-street, Dublin; or Eyre and Spottiswoode, London, E.C. 1905. Price 2s.

when it is borne in mind that it is not merely a rate resulting from sickness originating in the United Kingdom but that the deteriorating effect of conditions of tropical service has also to be taken into account. The returns, moreover, include many diseases contracted during service abroad—and we need scarcely point out how serious and fatal these often prove to be. In these respects no real comparison can be made between the British and other armies. Taken as a whole the figures for 1903 make a good record, especially as compared with 1902, when the strength was less than in 1903. For England and Wales the admission- and death-rates show a decrease; in Scotland the admissions to hospital were less but the death-rate was higher; while in Ireland both rates were reduced.

Only two cases of small-pox occurred in 1903 and the admission-rate for other eruptive fevers was lower than in the preceding year and as compared with the decennial average rate. There were 92 admissions and 28 deaths from enteric fever (a relatively high mortality). Aldershot had 27 cases and, as illustrating what we have already said, 16 of these are reported as having probably contracted the disease in South Africa or on the voyage home.

Turning to foreign stations and passing these rapidly in review, there is nothing calling for special attention at Gibraltar. At Malta the most noticeable point is that the prevalence of Mediterranean fever was much in excess of previous years; it caused 404 admissions, with nine deaths amongst the men, and 133 had to be invalided. 54 cases occurred amongst the officers, 21 of whom were invalided, while there were 70 cases amongst the women, with one death, and 33 cases amongst the children, also with one death.

In the South African command, with an average strength of 27,680, the admission, death, and constantly sick rates were 797·8, 11·06, and 60·03 per 1000 respectively. One fatal case of plague occurred. There were 145 cases of scarlet fever, the disease having been introduced into the garrison of South Africa by drafts from England. Enteric fever is endemic in South Africa. It caused 1155 admissions, 138 deaths, and the invaliding of 212 men. The disease shows, we are told, a regular periodic prevalence which is associated with the hot and wet season. Its prevalence usually begins in October and declines about May and invariably the fever is in almost complete abeyance during the dry cold weather of June, July, August, and part of September. The key to the prevention of the disease in South African experience, as in that of India, is to be found, the report says, in the *prevention of soil pollution*.

It is noteworthy that at Mauritius, in which colony plague was very prevalent during the later months of the year, only one case (the patient recovered) occurred among the European troops. There were five fatal cases amongst the non-European troops. The health of the troops in Ceylon was good; there was only one admission for enteric fever.

Passing on to India, we are glad to call attention to the fact that the health statistics for the year were exceptionally good, the admission-rate being lower than that for any of the 22 preceding years. There was also a decrease in the mortality, constantly sick, and invaliding rates. The chief causes of sickness were malarial fevers and venereal diseases. As regards enteric fever there was an increase in the admission and constantly sick rates. The death-rate, however, shows a decrease as compared with the previous year.

The increase in the number of admissions for enteric fever, occurring as they do for the most part in young soldiers during their first year of service in India, must again be attributed to the arrival of large drafts and reliefs. Many of the men also who arrived from South Africa had been under the conditions of continuous field service for two or more years, and were probably rendered thereby more susceptible to any source of infection. Following the practice commenced in 1898, the chief points observed in 1903 in connexion with the causation of enteric fever in India are discussed at length. This part of the report contains much that is of value and importance to the army medical officer, and indeed to sanitarians generally.

In connexion with this we may refer the reader to the report "On the Health of the European Troops serving in India," *vide* pp. 219 to 252. There is no need to enter any further into this subject now. It suffices to say that the sources of infection are manifold and as having a close bearing on this subject the reader is referred to THE LANCET of June 3rd, p. 1502, for a review of the "Report on the Origin and Spread of Typhoid Fever in United States Military Camps during the Spanish War of 1898." Considering the very extended period during which the bacillus may be detected in the urine (typhoid bacteriuria) of those who have suffered from the disease, the infection is very difficult to be guarded against. In addition to the rigorous system of sanitation and hygiene enforced in the Japanese army and to the great attention paid to personal cleanliness, the Japanese soldiers are said to have recourse to creasote pills with which they are supplied on field service as a prophylactic, but whether their use has contributed to the relative immunity of the Japanese troops to enteric fever in the present war is more than we can say.

In the remarks on dysentery in India, which caused 1133 admissions and 42 deaths as compared with 1238 admissions and 44 deaths in 1902, it is stated that—

The disease appears with unfailing regularity at certain stations, chief amongst which are Barrackpore, Secunderabad, and Lucknow. This year Rangoon heads the list with 64 cases and eight deaths, many of the cases being severe and of the amœbic variety. Barrackpore, which for years has preserved an unenviable dysenteric notoriety, shows a considerably reduced admission ratio for the year under report. A curious feature in regard to this station is the marked increase of the disease amongst British troops since 1893, whilst the figures for the same period for native troops show an equally marked decrease. The period of seasonal prevalence is from June to October; liver abscess is a common sequel, and in 15 instances, examined microscopically, all but two proved to be cases of amœbic dysentery.

MEDICINE, ITS PRACTICE AND ITS PUBLIC RELATIONS.

CHAPTER XVII.[1]

REFORM IN THE MEDICAL PROFESSION.

A Recapitulation of Prominent Grievances.—The Organisation of the Medical Profession.—The British Medical Association.—Local Medical Unions.—Medical Defence Associations.

THE object of writing these chapters has been to display the present state of the medical profession from a sociological point of view rather than to suggest methods of reform for admitted abuses, though in many instances the remedy for such admitted abuses has been pointed out. This has been done only when there was no doubt about either the existence of the evil or the procedure which should be used to combat it. The cause of reform generally, however, should be benefited by the bringing together of material for debate where subjects of dispute are touched upon, and by an attempt to appreciate the grievances of the medical profession at their proper value and to regard them with some sense of proportion. Although the main aim has been not to inaugurate any course of action so much as to furnish material upon which action can be taken, certain obvious directions in which reform should occur immediately may now be indicated. Most of them depend upon two things. Medical union is wanted—medical combination in an intelligent and liberal form, a professional union based upon the public needs and not a trade union directed towards the amelioration of a class as against the community. And a better understanding with the public is also sorely needed. When these two things are accomplished much that is now hard and unjust in the medical life will disappear.

Take, for example, the conditions of service in the navy, in the army, and in the Indian army. They can be altered at a moment's notice at the instance of the respective powers that be; all that is necessary is to convince those authorities that such alterations are advisable. Substantial improvements have been made in the conditions of employment in all three services of late, as has been shown, and it is necessary that allowance should be made for the things that have been done when the plea for more is put forward. It is impolitic as well as inaccurate to continue to speak as if no self-respecting medical man could accept commissions in the three services. Talk of this kind, as well as threats of boycotting, perpetuate and confirm the most unfortunate thing in the present position—viz., the social disadvantage under which the services seem to lie. It is a fact that the recent failure of a popular service club in London has been attributed openly to the action of the

[1] Chapters I., II., III., IV., V., VI., VII., VIII., IX., X., XI., XII., XIII., XIV., XV., and XVI. were published in THE LANCET of Feb. 18th (p. 447) and 25th (p. 517), March 4th (p. 593), 18th (p. 736), and 25th (p. 817), April 1st (p. 877), 15th (p. 1017), 22nd (p. 1089), and 29th (p. 1151), May 6th (p. 1218), 13th (p. 1287), 20th (p. 1375), and 27th (p. 1449), and June 3rd (p. 1533), 10th (p. 1584), and 17th (p. 1657), 1905, respectively.

committee in electing medical officers. Consider the significance of such a statement even though it contains not a modicum of truth! It stands to reason that candidates for the services may be prevented by such stories from entering for commissions, which may be a very serious thing for the services, although there has been of late more competition to join them. The matter is one that is not much discussed in the medical press, for many who have the dignity of the profession at heart consider that in commenting upon the exclusion from clubs of medical officers undue stress is laid upon a mere act of snobbery, but I think no excuse is necessary for referring to it again here. The natural dislike of a young man to being reduced, through no fault of his own, to a position of social inferiority is one of the chief things that has kept commissions vacant, while the undermanning of the services, especially of the Royal Army Medical Corps, has been at the bottom of many of the troubles that have occurred of late years. It is no answer to the objectionable action of certain clubs to say that *if a medical man is a good fellow* he is never left out in the cold. Every other officer is admittedly the social equal of his brother officers *unless he is a very bad fellow*, which is a completely different thing. The situation, however, bids fair to be altered. Recently one of the best service clubs in London, at a special meeting, revised the ill-considered attitude of a previous election which had resulted in the exclusion of the medical officers, and there is good reason to suppose that this particular trouble is now over. It would never have occurred if the public, as represented by the army, had been in the least cognisant of medical aims and ideals and if the spokesmen for the Army Medical Service had kept those ideals in the van of their arguments. The various directions in which the warrants might be amended—nay, should in justice be amended—have all been mentioned in the chapter dealing with the military and naval medical service and there is not an alteration asked for that could not easily be granted. No opportunity should be lost by any member of the medical profession in pressing the just claims of the medical officers of the navy, the army, and the Indian army, but exaggerations and threats of boycott should be eschewed. The sense of the country is all in favour of a good medical service both in the army and the navy, and if the country could see that the civilian members of the medical profession were in complete sympathy with the equitable claims of the service members there would be less reluctance to reform on the part of the Government departments.

In a similar way, if the country and the Houses of Parliament could be made to understand that the difficulties of medical officers of health and Poor-law medical officers in different parts of the kingdom are not only very real but form sources of danger to the community at large those difficulties would soon receive attention. There is at the present moment before Parliament a little Bill[2] which has the support of the British Medical Association and which has two simple objects. It would insure that none but those properly qualified should be appointed as medical officers of health or sanitary inspectors, and it would give to all such officers and inspectors similar security in their tenure of office to that enjoyed by London medical officers of health. Security of tenure for medical officers of health and sanitary inspectors, so that the public health of the community may not be dependent upon the caprice of imperfectly constituted authority, would seem at first sight to be a measure of reform about which there need be no hesitation. There need not be any confirmation in office of unsatisfactory officials and there need be no difficulty about the removal of anyone who did not do his duty. No one suggests that the cause of sanitation demands such over-protection of medical officers; but to secure the public safety it is necessary that the executive officers should have a position commensurate in some degree with the importance and responsibility of their posts. The medical officers of health all over the country should be placed somewhat in the position which they enjoy in London—that is, they should be safe from individual spite and should be able to carry out a well-considered policy extending, it may be, over a term of years. No private interests of theirs or of anybody else should conceivably come between the public officers and their public duty. The community should see this, when Parliament would at once see it. The differences between the job work of the tradesman and the professional work of the sanitarian are not clear to the public but surely they could be made so if the medical profession were, as a whole, resolved that they should be.

The special grievances and drawbacks under which the medical profession labours in Ireland and Scotland can be removed at once by direct legislation aimed at patent abuses, but again the necessary prelude is unanimous opinion on the part of medical men. The eccentric subordination of the Scottish parish officers to a parish council and the harsh treatment of the Irish dispensary officers, who form nearly half the general practitioners of their country, are matters which require no further discussion to make clear the immediate necessity for their remedy. The Irish dispensary medical officer should have proper pay, proper pension, and proper treatment as a Government officer; the Scottish Poor-law medical officer should be fairly subsidised in the districts where subsidy is needed and should be protected from parochial tyranny. The position of education in Ireland, and the warring of the two great divisions of the Christian faith, produce in that part of the United Kingdom particular complications, and it must be recognised that the question of creed accounts for some of the difficulties in Ireland that may have only a professional aspect. It is rash to make any suggestion of reform here, for, in respect of Irish affairs, whoever does not agree with a proposition always considers its proposer an ass, and generally says so. However, it seems to me that the institution and subsidy of two new universities in Ireland would meet all the troubles due to the lack of higher education in that country. The need of a Roman Catholic University in Ireland arises from a feeling on the part of the Roman Catholics against the education of their children with the children of other faiths. The logicality of this feeling is much in dispute, but it is a strong and general one on the part of the majority of the inhabitants of Ireland and must be respected as such. The endowment of a university for the north of Ireland which, though nominally upon non-sectarian lines, would tend to become a Protestant institution must accompany the extension of privileges to the Roman Catholic community, and probably the course which would give the greatest satisfaction would be the re-establishment (as has been suggested by Sir William Whitla) of the old Queen's University in headquarters at Belfast.[3] The educational position arising out of the mixed religions of the community has been dealt with more or less successfully in Canada. In Ontario, where the majority is Protestant, and in Quebec, where the majority is Roman Catholic, good educational standards are obtained by a dual system. Why should politicians despair of obtaining the same in Ireland?

In all the circumstances so far alluded to, reform should follow immediately upon the definite action of a superior authority, whether it be Imperial Parliament, the War Office, or one of the Local Government Boards, having the desire to remove the abuse. And if the medical profession were properly organised, so that a common opinion upon many matters of medical politics were seen to be held, it would not be so difficult as it is to move Parliament or any constituted authority in the proper direction. A steady plea for justice, made with determination and moderation and backed by incontrovertible argument, has told already in several directions, but a unanimous expression of opinion from the medical profession would make the cause of reform much simpler. This, however, is lacking and it sometimes seems as if the medical profession were without a coherent view upon some of its most vital interests. A man may know what affects him personally in his professional life, but he seems never to appreciate that a similar thing may also affect his professional brother, while the medical men who do think about the conditions under which they work in something of a statesmanlike manner are rare. This is easy to understand, though it is none the less regrettable. Those who have few or no grievances cannot be expected to press for front places in the ranks of reform, and it happens that those who have few or no grievances are exactly those who would have most influence in obtaining redress, while those who suffer from the existing conditions have no time to make protest or no position from which to do so influentially. They possess no individual power and absence of organisation deprives them of the power of their numbers. Isolated members of this class see the immediate evil that

[2] THE LANCET, March 4th, 1905, p. 587.

[3] The University Question in Ireland, by Sir W. Whitla, M.D. Irish University Education, by William Delany, S.J.

threatens themselves and lift their voices in protest. But they do not see the troubles of other members of their own profession and they fail to take into account any general social factors that may be playing a part. Unbacked by any following of their own profession and unprepared with any arguments (save arguments that tell in favour of a limited class) why they should be listened to, they have no chance of effecting anything. Legislation will never be obtained for the benefit of medical men as a class, and no apology is needed for repeating this fact. What is good for the medical profession is good for the public, for it is to the public advantage to be served by a properly paid, properly organised, and self-respecting medical body. Demands for the redress of medical grievances on this ground will command weight, but here again it must be noted that neither the public nor Parliament can be stirred to the quick by generalities. It must be shown to Parliament that the public will be benefited certainly, and benefited primarily before legislation will occur, and to demonstrate these things requires organisation.

The medical profession is not, of course, entirely without organisation, and there are grounds for thinking that its power for safeguarding its interests is growing. The British Medical Association was newly constituted in 1902 with the distinct intention of forming a more vital medium of union between members of the medical profession, and sufficient time has not yet elapsed to show how far this intention will be fulfilled. By the new articles of the Association the central government is kept ingeniously in touch with the whole constituency, and representatives, whose travelling expenses are paid by the Association, can make the wants of medical men in all parts of the country known to the centre. That is to say that the British Medical Association in its present shape possesses a fine fighting machinery. Take, for example, the question of contract practice. If a member of a division of the Association intimated through that division to the branch of which it formed a part, and so to the council of the Association, that he was resigning a certain post because the conditions of tenure were unprofessional, it would be possible for the Association to ostracise all members of the Association who accepted the post which had been resigned. Again, every branch might constitute itself into a court of honour and so a system of ethical conduct might be evolved. The British Medical Association is in short a powerful combination. It has numbers, it has a sound working scheme, and all its members are, perforce, educated people who do not hanker after trade-union methods, but who merely desire the fair treatment that will enable them to do their work under proper conditions. With all these advantages we are right to expect great things from the British Medical Association in the direction of reform, but the body of members, if their attitude at general meetings may be taken as a criterion, are not yet sufficiently interested in the matter. They have, perhaps, not yet learned the powers of the body to which they adhere.

In the meantime a fair number of medical unions have been called into being with a view of establishing a consensus of professional opinion upon such matters as contract practice. Their members have perceived the conditions and the necessity for combined action. It is important that these societies should not cease from their task, although in the future the British Medical Association may be in a position to supersede them. At the present moment it is conceivable that the very completeness of the scheme of the Association is against its smooth working in the case of local troubles. The all-important thing in local troubles is speedy action, while the developments of the Association are towards a concentration of responsibility at headquarters which usually leads to delay. The time may come when the branches or divisions of the Association may be so familiar with the details of medical defence, with the methods of sanitary authorities, and with the aims of medical aid associations as to be able to muster with promptitude behind an injured practitioner the full force of the Association. But at the present time this is not what occurs, and much of the work of protecting the practitioner from the effect of unfair competition has fallen upon local organisations.

In one direction the members of the medical profession can make use of machinery that has been ably and successfully planned for their protection. There exist in the Medical Defence Union and the London and Counties Medical Protection Society means whereby medical men can secure themselves against unjust treatment at the hands of the public, while the disciplinary functions of the General Medical Council can be assisted at the same time. Each of these two bodies is excellently managed and each has met with distinct and meritorious success in championing oppressed medical men. The ease with which accusations against the moral character or professional skill of medical men can be made is well known and swiftly perceived by all with a taste for *chantage*. To read the annual report of each of the two associations is to see how manifold are the risks which the medical man runs at the hands of the unscrupulous in the daily work of his life, while the many cases of triumphant defence prove that against organised resistance the tactics of the blackmailer are almost bound to fail. The Medical Defence Union and the London and Counties Medical Protection Society, covering the same ground in their efforts and located in the same city, would probably gain in utility to their clients by amalgamation, and such a fusion of funds and interests has long been debated as a policy that would make alike for economy and effectiveness; but, though the joint work that the two societies could do might more than double the total that they now accomplish separately, the value of their labours must not be belittled on this account. These two societies represent the best corporate attempt in the medical profession to deal with existing hardships, and the fact that they have been able to do so with a large measure of good fortune shows how much might be achieved by corporate effort of a more general character.

One of the principal objects of the change in the constitution of the British Medical Association was to place at the service of the medical profession an institution which should combine the advantages of a local medical society with those of an imperial organisation. The probability is that in time this object will be realised, but the present is a period of interregnum and only such already existing local societies as feel that they have not accomplished their aims are likely to exterminate themselves before seeing that the Association will be willing as well as able to fight their battles for them. There are several local societies which watch over the interests of their members with keenness and success. None of them is a particularly strong or influential body, but all have the merit of being prompt to act and familiar with the situations that may arise in the locality. I may mention, for example, the Northumberland and Newcastle Medical Association which has secured for medical men the respectful attention of mine-owners and miners who had previously regarded them as fair game for exploitation. Reform, if the word is to imply doing rather than talking, for the present depends, it seems to me, upon the multiplication of such bodies. This does not imply the creation of a crowd of new associations. In every populous centre the medical society—there is always such a body—should be prepared to deal with ethical questions and might be erected into an authority to decide upon professional matters. This would in no way change the character of the society as a scientific body, for the political and scientific sides could be kept apart in their working, while each would gain by the union. Thus, each section of the medical profession would become familiar with the needs of other sections, the stupidity of dissension would become patent, and the public would range itself on the side of well-founded demands for reform. Then reform would follow.

(To be continued.)

EPSOM COLLEGE.

A BRIEF ACCOUNT OF ITS FOUNDATION IN 1851, WITH PARTICULARS CONCERNING THE BENEVOLENT AGENCIES OF THE PROFESSION FROM 1840 TO THAT DATE.

IN view of the celebration of the jubilee of the opening of Epsom College on July 1st, when the council and the headmaster will entertain a large party of old Epsomians at the College, our readers will no doubt be glad to have a brief sketch of the foundation of the College by Mr. Propert in 1851 and of the efforts made for some years before to inaugurate institutions to transact the two branches of work which are now so successfully carried out by the College—namely, the provision of a first-rate education for the sons of medical men at a moderate charge and the relief of medical

men and their families when in distressed circumstances. Many old boys who were present at the opening of the College, or who went there very soon afterwards, have accepted the council's invitation and it is easy to imagine the satisfaction which they will experience at calling to mind the buildings of their time which were just sufficient to accommodate 150 boys and stood in about 17 acres of land, whilst comparing them with the numerous buildings now standing in close upon 80 acres of land, comprising the hostel, a lower school to accommodate 100 junior boys, a head-master's house, a chapel providing 380 seats, three laboratories, a very large swimming bath, a carpenter's workshop, a reading and art room, a lecture theatre, a detached sanatorium, a library, and a gymnasium.

To take as a starting point the year 1840, there were at that time numerous medical benevolent agencies in existence, the most important of which was the Society for the Relief of Widows and Orphans of Medical Men. Having been in existence 57 years it possessed in 1845 217 life members and 126 annual subscribers and was giving assistance to 35 widows of deceased members and to 22 of their children. The British Medical Benevolent Fund was established as the "Medical Benevolent Fund" in 1836, but the scope of its work in the early days was very restricted, the receipts for the year 1841-42 being only £202 and the disbursements £56. The Surrey Medical Benevolent Society, founded in 1812, had from the first been judiciously managed, the result being that it possessed in 1855 funds amounting to £5500, at which time the claims upon the society did not exceed one-eighth of its income from dividends. Its committee therefore negotiated the purchase of four scholarships at the College in order to further the objects of the society. The "Medical Benevolent Society for the Town and County of Leicester" was founded in 1788, but no meetings having been held since July, 1818, and as no claims had for many years been made the trustees handed over to the College the residue of their funds. There were also the Devon and Exeter Benevolent Medical Society; the Birmingham Medical Benevolent Society, established in 1821; the Essex and Hertfordshire Benevolent Medical Society, founded so far back as 1786; the Kent Benevolent Medical Society, established one year later; the Lincolnshire Medical Benevolent Society, founded in 1804; and the West Riding of Yorkshire Medical Charitable Society, founded in 1828.

In 1844 a committee was appointed at the annual meeting of the Provincial Medical and Surgical Association, which was the title of the British Medical Association prior to 1854, to consider the establishment and organisation of schools for the education of sons of members of the medical profession on such low terms of expense as might be consistent with a course of education of a high character. The committee, which was requested to lay its proposals before the council of the Association or before the next general meeting of the members, consisted of Dr. Forbes, Dr. Kerr, Dr. Heygate, Dr. Edwards, Dr. Hodgkin, Dr. Hardwick, Dr. Budd, Mr. Hodgson, Mr. Nunneley, Mr. Daniell, Mr. Wallace, and Mr. Martin. Dr. Forbes of London was appointed chairman and Mr. Thomas Martin of Reigate secretary. The appointment of the committee took place at Northampton, but it was found that most of the members were too far apart from each other to admit of convenient meetings being held, hence it was decided to form a subcommittee of those gentlemen residing in or near London—namely, Dr. Forbes, Dr. Hodgkin, Dr. Hardwick, Mr. Wallace, and Mr. Martin, any subjects of great importance to be laid before those members living at a distance by letter. The salient features of the scheme which was eventually proposed were as follows:—that a sum of £10,000 should be raised in shares, donations, and benefactions; that at first only one school, to educate from 200 to 300 boys, should be established in London; that pupils should be admitted by nomination only, the sons, grandsons, nephews, or wards of members of the medical profession to be admitted at the charge of 30 guineas per annum for board and education, with an entrance fee of £3 3s.; other boys to be admitted at the annual charge of 40 guineas, with the same entrance fee, but the latter not to be nominated in a larger proportion than one in three; that the government of the institution should be in the hands of a council consisting of 24 medical men, the members to continue in office three years and to retire in sections of thirds, but to be immediately eligible for re-election; and that the annual meetings of shareholders and donors should be held in London, at the school, or wherever the council might consider to be most eligible.

In presenting the scheme to the members of the Provincial Medical and Surgical Association and to the profession generally, the committee observed that it entertained no misgivings as to the probabilities of its being successfully carried out and it appended to its report the names of 12 subscribers and benefactors as follows: Dr. A. Robertson, £100 donation; Mr. E. Daniell, one share of £25; Mr. Thomas Martin, one share of £25 and £100 donation; Mr. J. Hodgson, £100 donation; Sir Benjamin Brodie, Bart., £100 donation; Dr. John Forbes, £100 donation; the Misses Wallace, £25 benefaction; Mr. Edward Wallace, one share of £25 and £20 benefaction; Dr. A. Hardwick, £20 donation; Sir James Clark, Bart., £100 donation; Mr. T. Nunneley, one share of £25; and Mr. P. J. Martin, £25 donation. It may be added that the first idea of the committee was to raise the whole sum by means of shares only, but finding that there were strong objections against this plan in the minds of some it proposed the alternative in the form of donations. The class of benefactions was created for those who did not wish to incur the responsibilities and duties of the shareholders and donors. This report, signed by the chairman and the secretary, was dated Dec. 26th, 1844, but in spite of the generous offers referred to the scheme eventually fell through. It is interesting to note, in view of statements which have been made that Mr. Propert intended Epsom College to be exclusively for the sons of medical men, that in this scheme, proposed some years before the initiation of the College, it was intended that more than one-third of the boys should be sons of those not members of the medical profession.

The General Medical Annuity Fund.

In the following year Mr. Edward Daniell of Newport Pagnell delivered an address at Sheffield on the thirteenth anniversary of the Provincial Medical and Surgical Association containing proposals for establishing a General Medical Annuity Fund for disabled members of the medical profession, their widows and orphans, and at the conclusion of his speech proposed the following motion which was seconded by Dr. Robertson of Northampton and carried unanimously:—

> That a committee of the Association be appointed immediately to consider, discuss, and arrange the best preliminary steps for the establishment of a self-supporting institution connected with the Provincial Medical and Surgical Association, to be called an "Annuity Fund for Decayed Members of the Association and for Widows and Orphans of Members."

The first meeting of the committee was held on Sept. 8th, 1845, when there were present: Dr. A. Robertson (in the chair), Dr. W. Kerr, Mr. E. Daniell, Mr. H. Terry, Mr. John Faircloth, Mr. Robert Ceely, and Mr. John G. Appleton. It was ultimately resolved to establish a fund for the payment of annuities to superannuated or disabled members of the medical profession, their widows and orphans, the title of the institution to be "The General Medical Annuity Fund," the appointment of officers to be vested in the Provincial Medical and Surgical Association. It was decided that an annual subscription of one guinea should entitle a legally qualified medical man in the United Kingdom to become a member of the Fund and at the expiration of the fifth consecutive year of his subscription such member, or his widow or orphans, would become eligible to receive an annuity. For every 100 subscribers there were to be three annuities, not exceeding £25, for superannuated or disabled members, and three annuities, not exceeding £15, for widows and orphans. It was decided that the directors of the fund should report the general state of the affairs of the institution at the annual meeting of the Provincial Medical and Surgical Association, and that elective members should consist of not fewer than ten members of the Provincial Medical and Surgical Association, of whom not fewer than four were to be resident in the district where the annual meeting of the Provincial Medical and Surgical Association was to be held. The officials selected were as follows:—President: Dr. Charles Fox Favell. Treasurer: Dr. Archibald Robertson. Managing Director: Mr. Edward Daniell. Elective managers: Mr. Richard Faircloth, Mr. J. G. Appleton, Mr. J. G. Crosse, Mr. Thomas Paget, Mr. Francis Elkington, Dr. William Budd, Dr. Charles Cowan, Dr. Edward Holme, Mr. Peter Martin, and Mr. W. Kent. Secretary: Mr. Joseph Staines (Newport Pagnell).

By the end of the second year some modifications of the rules were made. It was decided that a subscription paid

in advance for 20 years, or a donation amounting to 20 guineas, should constitute the subscriber a member for life and that for every 100 subscribers the directors should grant four annuities of £25 each; but it was provided that no member or his widow or children should be eligible for an annuity unless the subscriber had been a member of the society five years from the payment of his first subscription. Ultimately the society was severed from the Provincial Medical and Surgical Association. Although in the course of four years from the foundation of the society Mr. Daniell obtained 182 subscribers and received a considerable sum in donations it was acknowledged that he had failed in carrying out his object in founding the society to any practical purpose. As its severance from the Provincial Society rendered the remodelling of the fund necessary, apart from the fact that it was difficult to carry on the work in the country, and ascertaining that there were some practical defects in the original plan, Mr. Daniell resigned the direction of his society in 1849. A committee was appointed to place the institution on a new basis and in October of that year a new title, "The National Medical Annuity and Relief Fund Society," was proposed, but it was ultimately decided in July, 1850, to adopt the designation, "The British Medical Fund, a Provident and Relief Society for Medical Men, their Widows and Orphans." The institution was enrolled as a benefit society, Mr. Hawtayne was appointed secretary, and offices were engaged at 28, Bloomsbury-square. The reconstructed society consisted of provident and relief branches. The object of the former was to enable members of the society to assure for themselves deferred annuities, to effect assurances upon their lives in sums not exceeding £200, to afford the means of securing for themselves a certain weekly provision during sickness or other bodily or mental infirmity, and to secure a definite annual provision by way of maintenance for their widows or children. The object of the relief branch was to provide by donations, subscriptions, bequests or otherwise, a fund for the purpose of granting temporary or permanent relief to persons who were or had been members of the society, or to their widows or families. Sir Benjamin Collins Brodie, Bart., was elected President and the following were appointed directors: Dr. John Forbes (chairman), Dr. J. R. Bennett, Mr. J. Bird, Mr. T. B. Curling, Mr. H. Hancock, Mr. E. Headland, Mr. J. Propert, Dr. E. H. Sieveking, Dr. J. Spurgin, Mr. G. J. Squibb, Mr. S. Stedman, and Mr. T. Taylor.

In spite of the carefully thought out programme and of the unremitting efforts of the directors the society was doomed to failure. Members of the profession generally did not avail themselves of the advantages offered by the society; there can be no doubt that the lack of a substantial reserve fund was an important factor in its failure and perhaps the ambitious programme of the reconstructed society had a share in its failure, since its rules, tables, &c., filled 40 octavo pages. Nevertheless, the directors had faith in their scheme, for in their report submitted to the special meeting of members on June 2nd, 1852, at which the society was dissolved, they wrote as follows:—

> The directors believe that when the means are no longer available they [i.e., members of the profession] will awake to a due appreciation of the greatness of the boon they have lost by their apathy and negligence. It is to be hoped that, if such a period arrives, the profession may exert their powers to resuscitate this institution (they can hardly create a better) and learning wisdom from the past may, by the supply of more timely and more copious nutriment, rear it to maturity and vigour.

Commenting on the directors' report the *Medical Times and Gazette* of June 12th observed:—

> Judging from some statements in the report we should imagine that, if the sum of £2000 could be at once subscribed, it would be sufficient to accomplish the great end in view.

The London and Provincial Medical Protection and Benevolent Society.

It was probably about 1847 or 1848 that a society was founded under the above title, the objects of which were to create a higher tone in the public mind towards the medical profession and to secure the more regular payment for professional services from those who possessed the means but not the disposition to remunerate medical men. There was also a proposal to establish a fund to be devoted to the erection and support of a college for the education of the sons and daughters, orphans or otherwise, of medical men and also to provide houses for the reception of distressed members of the medical profession or their widows. Mr. Propert consented to be its president; the bankers appointed were Messrs. Goslings and Sharpe of 19, Fleet-street, E.C.; the treasurer to the building fund was Mr. Robert Gosling; and the following constituted the committee: Mr. T. Ballard, Mr. A. B. Barnes, Dr. Adolphus Barnet, Mr. T. T. Campbell, Mr. F. Clarke, Mr. G. W. H. Coward, Dr. W. Crellin, Mr. R. Dunn, Mr. R. Edgcumbe, Mr. George Fincham, Mr. F. Godrich, Mr. G. Harwood, Mr. J. Ince, Mr. F. G. Johnston, Mr. C. F. J. Lord, Dr. W. Major, Mr. W. C. Meates, Mr. S. Pearce, and Mr. J. Sharp.

In an article which appeared in THE LANCET of April 5th, 1851, the history of this unfortunate society was given. It seems that Mr. Propert lent the influence of his name in every legitimate manner to forward the interests of the institution and, as he believed, of the great body of its members, having full confidence in the integrity of the immediate movers of the scheme. But the society proved to have been mismanaged and the liabilities of the conductors were great, the result being, as might be expected, the irretrievable ruin of the institution. With great generosity Mr. Propert undertook to pay out of his own pocket all debts due to members under £10 in amount. The investigation of the accounts of the defunct society brought to light the fact that one of the causes of the impoverished condition of medical men was their inability to obtain payment of their accounts. When it is stated that the books of this single society showed that the enormous sum of considerably over a quarter of a million was due to its members for unpaid debts, it will be seen that there was certainly scope for the foundation of a school where the sons of medical men could obtain efficient education at a lower rate than that charged by the leading public schools of England.

It was on the failure of this society that Mr. Propert contemplated the foundation of Epsom College and in an article which appeared in THE LANCET of April 5th, 1851, an extract from which is given below, the matter was referred to; in fact, this was the first notice of the proposed College which appeared in the press; but at that date Mr. Propert had not definitely settled the details of his scheme. The Editor wrote as follows:—

> Could the veil be uplifted from the household sanctuary of many of the now humble homes of those who were the wives and children, though now widowed and orphaned, of once prosperous medical men, the scenes presented would quail even the stoutest hearts. Sad as was the history of a country surgeon, lately portrayed with so much eloquence in the *Times*, in connexion with the iniquitous income-tax, that picture, far from being overcharged, might have been painted in still darker colours. The after-history of such a family, particularly where there are six or seven, instead of two children, would be too painful to dwell upon. Honour, then, to those who would avert such calamities! And especially at this time would we do honour to the efforts that are being made by that most respectable member of our profession, Mr. Propert, to establish an institution to remedy the evils of which we have spoken.

With regard to the reference to the "iniquitous income-tax" it will be remembered that this tax was reimposed by Sir Robert Peel in 1842, after it had been in abeyance for 26 years; and as the rate of 7*d.* in the £ was imposed on all incomes exceeding £150 country medical practitioners, with their heavy necessary expenses, bad debts, and unpaid accounts, were probably more affected by the tax than members of any other profession.

The scheme for the establishment of Epsom College, as foreshadowed in this article, was somewhat indefinite, for reference was made to a school for both the sons and daughters of medical men, and it was implied that the College would be to some extent a reconstructed medical protection society with a debt-collecting department. However, Mr. Propert must have lost no time in applying himself to the details of the proposed institution for within one month he had definitely settled his scheme and it has ever since been carried out on the broad lines then decided upon—namely, a school for the sons of medical men and others, the former to be educated and maintained at as moderate a cost as possible, and the support of pensioners. In the early part of the nineteenth century the favourite mode of maintaining pensioners was to provide them with furnished apartments in almshouses, yet it is surprising that a long-sighted man like Mr. Propert, who succeeded in launching an institution when, as we have seen, others had laboured indefatigably but failed, did not see the incongruity of placing the failures of the profession permanently before the eyes of schoolboys, many of whom would aspire to follow that profession. In an article in the *Provincial Medical Journal* in 1851 attention was drawn to the fact that objections had been raised to the idea of almshouses as being degrading to the medical profession. Referring to Mr. Propert's scheme,

the Editor of THE LANCET on May 3rd, 1851, wrote as follows:—

We highly approve of the plan of supporting a number of medical pensioners, but we give our special support to the collegiate department of the proposed institution. The school for "the education and maintenance" of the sons of medical men ought to entitle the proposed college to the support and pecuniary contribution of every legally qualified medical practitioner in the kingdom.

Another extract from this article will prove of special interest to old Epsomians and others who for many years wished the title to be changed from "The Royal Medical Benevolent College," an alteration which was effected at a special general meeting of the governors in 1903.

We wish, then, the proposal of Mr. Propert good speed. We should like to see the term "Benevolent" omitted from the title, but for the objects of the institution, whether for eleemosynary or educational purposes, we have but one word and one thought, that of hearty cooperation and support.

There are probably few persons living now who were present at the general meeting of members of the medical profession and others which was held at the Hanover-square rooms on Wednesday, June 25th, 1851, under the presidency of Earl Manvers, to consider the propriety of establishing a "Medical Benevolent College." A complete list of those present on that occasion does not appear to have been preserved but the following were amongst those who attended: Dr. Aldis, Dr. Allison, Mr. John Bowling, Mr. Henry Cancellor, Mr. Nathaniel Clifton, Mr. Benjamin Bond Cabbell, M.P., Dr. John Forbes, Mr. James William Freshfield, M.P., Mr. George J. Guthrie, Mr. Henry P. Fuller, the Rev. Thomas Garnier, Sir Robert Harry Inglis, Bart., the Rev. J. Jennings, the Rev. David Laing, the Bishop of London, Mr. Charles F. Lord, Sir Thomas Phillips, the Rev. George Pocock, Mr. John Propert, the Bishop of Ripon, Dr. Spurgin, and Dr. James Arthur Wilson. In his address to the meeting Mr. Propert adverted to the many cases of distress which existed in the medical profession and in families of medical men deceased, arising in many instances from premature widowhood and other contingencies which were peculiar to the profession, and having informed the meeting of the principles upon which it was proposed that the Medical Benevolent College should be founded he briefly alluded to the success which had up to that period attended his exertions in furtherance of the object. He pointed to the benefits likely to follow the establishment of such an institution and appealed to the public and to the profession in its support.

At the conclusion of Mr. Propert's speech, it was moved by the Bishop of London, seconded by Sir Robert Harry Inglis, Bart., and resolved unanimously:—

That this meeting, under a sense of the claims of the medical profession upon the public at large, hereby declares the formation of the Medical Benevolent College on the plan suggested by John Propert, Esq., and pledges itself to promote its success by every means in its power.

Earl Manvers consented to accept the office of President, Mr. Robert Gosling was appointed treasurer, and it was decided that the council should consist of the President, the vice-presidents, and 26 gentlemen appointed at the meeting. The public initiation of the College having taken place Mr. Propert lost no time in organising his enthusiastic band of workers. A few months after the initiation of the College a rumour became current that it was to be essentially a "class" school and as this was contrary to the intentions of the founder and was likely to be prejudicial to the success of the institution the council lost no time in contradicting the rumour through the columns of THE LANCET. In the issue of Nov. 29th, 1851, the Editor wrote as follows:—

It has gone abroad as an objection to the scheme that the school will not only be exclusively for the sons of medical men but for those sons only who are intended for the profession. The idea is monstrous. We have authority for stating that the school will not be confined to the sons of medical men but the foundation will be exclusively for the orphans and sons of distressed members of our own profession, whatever be their future destination, and that they will be educated in a manner to fit them for first rate mercantile pursuits, Government offices, or any of the professions or respectable trades.

Those who were present at the special general meeting of the governors in November, 1903, when the title of the institution was changed to "Epsom College," will recollect that a letter was read from Mr. John Lumsden Propert giving his views as to the intentions of his father in establishing the College. It is remarkable how closely these views approximate to those held by the founder as expressed in the article quoted above. But though money came in freely it was not without unremitting work on the part of friends throughout Great Britain. The lack of interest which proved fatal with other medical benevolent societies was conspicuous in the case of the College and in commenting on this THE LANCET frankly stated in its issue of Jan. 3rd, 1852, that at the outset of the scheme many medical men doubted its final success and therefore declined to attach their names to what they conceived to be a failing cause. This hesitation was but natural, since both the London and Provincial Medical Protection and Benevolent Society, which had failed, and the reconstructed General Medical Annuity Fund, which was wound up in 1852, had enjoyed the support of some of the most eminent men in the profession. THE LANCET therefore appealed to those who had not so far come forward to permit their names to be added to the list of contributors and the appeal evidently bore fruit, for in the issue of Feb. 7th, 1852, it was stated that the final success of the College could not be doubted in any quarter, its failure being no longer a possible contingency. Between £6000 and £7000 had already been collected and subscriptions were pouring in every day and almost every hour. Local secretaries were multiplying—volunteer collectors were starting up in every part of the country and some who had been once cold, cautious, and doubtful had become warm and zealous.

On Dec. 1st, 1852, the council formally took possession of the land at Epsom, on which occasion there was a gathering of friends. After the ceremony the party proceeded to the Spread Eagle Inn, where about 80 sat down to dinner. Mr. J. W. Freshfield, M.P., was in the chair, Mr. John Propert, who had succeeded Mr. Gosling as treasurer, was vice-chairman, and amongst the company were the Rev. G. Pocock, Dr. Conolly, Dr. Cooke, Dr. Sieveking, Dr. Gibson, Dr. Goodfellow, Dr. Tuke, Dr. Price, Dr. Power, Dr. Semple, Mr. H. Pownall, Mr. N. Clifton, Mr. G. T. Dale, Mr. W. Self, Mr. John Lewis, Mr. R. D. Edgecumbe, Mr. John Chippendale, Mr. G. Fincham, Mr. S. Roots, Mr. G. Pilcher, Mr. T. Hunt, Mr. W. Carr, Mr. C. F. J. Lord, Mr. W. C. Meates, Mr. Robert Dunn, Mr. John Ince, Mr. George Curtiss, Mr. J. F. France, Mr. P. Martin, Mr. W. Hart, Mr. W. T. Iliff, Mr. J. Churchill, Mr. John Harris, Mr. E. Clifton, Mr. T. J. Ryder, Mr. G. W. Driver, Mr. H. T. Davies, Mr. F. Crew, and Mr. T. F. Clarke.

On July 6th, 1853, the President, Earl Manvers, very kindly undertook to lay the foundation-stone of the College at a few hours' notice. His Royal Highness Prince Albert had graciously promised to perform that function and in view of the Royal visit triumphal arches had been erected and a very large gathering of friends of the institution had assembled. But about 4 o'clock a rumour was circulated that His Royal Highness could not attend and shortly afterwards Mr. Propert read to the assembled visitors the following letter from Colonel Grey:—

Buckingham Palace, Wednesday, July 6th, 1853.

DEAR SIR,—I regret to have to write to you, by command of the Prince, to say that it will be quite impossible for him to attend the ceremony to-day for laying the first stone of the Medical College. He regrets much the disappointment this may occasion to the promoters of this institution and was anxious himself to make every effort to attend, but His Royal Highness has a severe attack of indisposition, and his medical advisers are peremptory in their directions, that he should not think of leaving the Palace.

The numerous ladies present showed their interest in the College by presenting the sum of £1600 in donations of five guineas each.

On Sept. 6th, 1853, the contract for the building was signed, all legal arrangements having been duly made. It was originally proposed to build almshouses for 100 pensioners but the impracticability of providing accommodation for this large number was evidently realised in course of time, for 24 residences was the largest number built and ten years elapsed before even all these were erected. At the annual festival dinner held on Feb. 27th, 1855, the following letter was read announcing that Her Majesty the Queen had graciously extended her patronage to the College:—

Buckingham Palace, Feb. 27th, 1855.

DEAR SIR,—I have had the honour to submit to Her Majesty the Queen the purport of the conversation which I had with you this morning with respect to the Medical Benevolent College and I have the pleasure to inform you that Her Majesty has been pleased to grant her patronage to the College and to approve of the alteration of its designation to that of the Royal Medical College.—Yours truly,

To John Propert, Esq. C. B. PHIPPS.

Was it by accident or by design that Colonel Phipps omitted the term "Benevolent" in mentioning the new title of the institution which had been approved of by Her Majesty? In the first part of the letter to Mr. Propert he referred to the institution by its existing title "The Medical Benevolent

College" but at the conclusion he clearly stated that the Queen had approved of the alteration of its designation to that of "The Royal Medical College."

It should be mentioned that Mr. Henry Tudor Davies rendered invaluable services as honorary secretary in these early days of the College and both Miss Propert and her sister, Miss Harriet Propert, laboured incessantly in assisting their father. Mr. Davies was succeeded by Dr. Edward H. Sieveking in 1853, who continued in office until 1856, when Mr. Robert Freeman was appointed secretary. The first office of the College was at 4, Hanover-square, but in September, 1853, it was removed to 37, Soho-square, W., so that the council has held its meetings for over 50 years in the present handsome room facing Soho-square.

On June 25th, 1855, the ceremony of opening the College was performed by His Royal Highness Prince Albert who was accompanied by H.R.H. the Prince of Wales (His present Majesty the King). Prince Albert was attended by the Marquis of Abercorn, Colonel the Hon. C. B. Phipps, Captain the Hon. de Ros, and Sir James Clark, and having been received at the entrance porch by the officers and council His Royal Highness was conducted by Earl Manvers, Mr. Propert, and Mr. Hancock to an apartment prepared for his reception. The proceedings of the formal opening commenced at the entrance of the building where the following address was read by the Bishop of Oxford:—

May it please your Royal Highness,—We, the President, Vice-Presidents, and Council of the Royal Medical Benevolent College, beg most respectfully to express to your Royal Highness, our deep gratitude for your kindness this day in honouring the inauguration of this College with your Royal presence, which has been raised, as your Royal Highness is aware, by the voluntary subscriptions of many connected with the Medical Profession, who know and feel for the needs of their poorer brethren, and many more who have rejoiced to testify in this manner, their gratitude to a body of men, who face gladly many dangers and bear readily many sufferings in order to minister to others God's merciful gifts of healing. We rejoice unfeignedly that our most gracious Sovereign has condescended to bestow on it her Royal Patronage, and that your Royal Highness has added to this favour by your presence with us this day. We know that your Royal Highness and your August Queen are ever ready to sympathise with all who suffer, and believe that you are in this especial case further not unwilling to testify your gratitude to that Profession which aims, with God's blessing, at removing disorders and relieving suffering from which, in this world of sorrow, the highest in virtue and the most elevated in rank can claim no more exemption than the poorest or least worthy of the common family of man. May God abundantly return into your own bosom the kind assistance you have this day rendered to us!

To this address His Royal Highness replied in the following terms:—

Mr. President and Gentlemen,—It has given me great pleasure to attend here this day to open this valuable institution. Gratitude to the members of the medical profession is a feeling in which all must participate, and I have gladly witnessed the ready and general support which has been given to this undertaking, which has for its object to administer to the distresses of those who have in their more prosperous days devoted their time and energy to the alleviation of sufferings and the restoration of the sick to their families.

The Bishop of Winchester then read a psalm and offered up prayers, after which His Royal Highness formally declared the Royal Medical Benevolent College to be opened. He was then conducted over the principal parts of the building; on returning to the reception room he received the company assembled, and soon after 5 o'clock the Royal party left. About 500 visitors partook of a *déjeuner*, at which Earl Manvers presided. After the loyal toasts had been enthusiastically received and the toasts to the Army, Navy, Bishops, Clergy, and Chairman had been drunk, Mr. J. Lloyd Davies, M.P., proposed the health of "The Founder." Mr. Propert's reply, as under, cannot fail to be interesting, and it is needless to say that on rising he was repeatedly cheered:—

I am quite sure that the warmth of human kindness which has brought you here to-day will induce you to feel for the individual who now stands before you. I am also sure that you will make every allowance for me when I beg you to believe that I feel almost overcome by your kindness. When we look back to the short space of three and a half years which have passed, it is not four years since, when my noble friend—he will pardon me for saying so because I have just cause to do so, he has always been a friend—lent me his assistance in the project, it was the first day when a meeting was held in the Hanover-square Rooms under his lordship's presidency. When I reflect upon what we have been able to do, the humble individual now addressing you has great reason to be proud that the power to carry forward the plan has been lent to him, and that we have been able to relieve those who cannot help themselves, and who are deserving of our highest sympathy. I need not tell you this institution has been raised for the purpose of assisting and comforting the distressed members of our profession, to console the afflicted widow, and to rescue bereaved orphans from the bonds of indigence and want, and to put them in a way of procuring a livelihood so as to be a credit to themselves and an ornament to society. When I look back upon what has been done I cannot find words to thank you for your kind support to the undertaking. There is one circumstance connected with the day's proceedings of which I cannot but feel proud, and that was, like a true Welshman, I wished Prince Albert to condescend, if were possible, to bring his Royal Highness the Prince of Wales with him at the opening ceremony. My wish was complied with—a circumstance most gratifying to me, and indeed, I thank God, every step I have taken on behalf of this noble institution has received the most cordial support, and this it is which has enabled me to make such progress with the building—although it has been little more than 16 months in rising to its present position. You have all done your duty—and I hope and trust that our building will endure and be a blessing to generations yet to come.

After some other toasts the party adjourned to the dining hall, where, as the report of the day's proceedings states, dancing was enjoyed until the time arrived for the departure of the special train. Thus ended the day of the opening of Epsom College, the jubilee of which will be celebrated on July 1st.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In 76 of the largest English towns 7437 births and 4016 deaths were registered during the week ending June 17th. The annual rate of mortality in these towns, which had been 14·6, 14·7, and 13·5 per 1000 in the three preceding weeks, further declined last week to 13·4 per 1000. In London the death-rate was 13·3 per 1000, while it averaged 13·5 in the 75 other large towns. The lowest death-rates in these towns were 5·1 in Handsworth (Staffs), 5·1 in Leyton, 5·6 in Hornsey, 6·6 Ipswich, 8·0 in East Ham and in Great Yarmouth, 8·1 in Devonport, 8·2 in Brighton, and 8·5 in Croydon; the highest rates were 17·0 in Middlesbrough, 17·1 in Birkenhead, 17·3 in Newcastle-on-Tyne, 18·5 in Preston, 19·1 in Merthyr Tydfil, 19·8 in Sunderland, 20·5 in Wigan, 22·5 in Barrow-in-Furness, and 23·3 in Tynemouth. The 4016 deaths in these towns last week included 355 deaths which were referred to the principal infectious diseases, against 414, 410, and 413 in the three preceding weeks; of these 355 deaths, 134 resulted from measles, 77 from whooping-cough, 66 from diarrhœa, 32 from diphtheria, 25 from scarlet fever, 19 from "fever" (principally enteric), and two from small-pox. In Croydon, Hornsey, Portsmouth, Walsall, Rochdale, Blackburn, South Shields, and in eight other smaller towns, no death from any of the principal infectious diseases was registered; while they caused the highest death-rates in Hanley, West Bromwich, Coventry, Warrington, Barrow-in-Furness, and Middlesbrough. The greatest proportional mortality from measles occurred in Walthamstow, West Bromwich, Coventry, Birkenhead, Warrington, Barrow-in-Furness, Sheffield, and Merthyr Tydfil; from whooping-cough in Middlesbrough and Tynemouth; and from diarrhœa in Middlesbrough and Rhondda. The mortality from scarlet fever, from diphtheria, and from enteric fever showed no marked excess in any of the large towns. One fatal case of small-pox was registered in Derby and one in Preston, but none in any other of the 76 towns. The number of small-pox patients remaining under treatment in the Metropolitan Asylums Hospitals, which had been ten, nine, and nine on the three preceding Saturdays, had further declined to seven on Saturday last, June 17th; three new cases were admitted during the week, against one and three in the two preceding weeks. The number of scarlet fever cases in these hospitals and in the London Fever Hospital, which had been 2200, 2268, and 2285 at the end of the three preceding weeks, had further risen to 2356 at the end of last week; 292 new cases were admitted during the week, against 312, 351, and 269 in the three preceding weeks. The deaths in London referred to pneumonia and diseases of the respiratory system, which had been 218, 235, and 191 in the three preceding weeks, further declined last week to 189, but were 47 above the number in the corresponding period of last year. The causes of 49, or 1·2 per cent., of the deaths in the 76 towns last week were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in West Ham, Nottingham, Salford, Leeds, Newcastle-on-Tyne, and in 47 other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, St. Helens, Manchester, Sheffield, Sunderland, South Shields, and Gateshead.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in eight of the principal Scotch towns, which had been 18·1, 16·9, and 16·4 per 1000

in the three preceding weeks, further declined to 15·7 per 1000 during the week ending June 17th, but was 2·3 per 1000 in excess of the mean rate during the same period in the 76 large English towns. The rates in the eight Scotch towns ranged from 9·6 in Leith and 12·5 in Aberdeen to 18·3 in Paisley and 24·4 in Perth. The 528 deaths in these towns included 29 which were referred to whooping-cough, 26 to measles, 15 to diarrhœa, two to "fever," one to scarlet fever, and one to diphtheria. In all 74 deaths resulted from these principal infectious diseases last week, against 76, 80, and 62 in the three preceding weeks. These 74 deaths were equal to an annual rate of 2·2 per 1000, which was 1·0 per 1000 above the mean rate last week from the same diseases in the 76 large English towns. The fatal cases of whooping-cough, which had been 24, 24, and 23 in the three preceding weeks, rose again to 29 last week, and included 14 in Glasgow, eight in Edinburgh, five in Paisley, and two in Dundee. The deaths from measles, which had been 33 and 17 in the two preceding weeks, rose again last week to 26, of which 16 occurred in Glasgow, eight in Edinburgh, and two in Perth. The fatal cases of diarrhœa, which had been 16 and 14 in the two preceding weeks, rose again to 15 last week, and included ten in Glasgow and two in Aberdeen. The deaths referred to different forms of "fever," which had been three in each of the three preceding weeks, declined last week to two, both of which were registered in Glasgow. The deaths from diseases of the respiratory organs in these towns, which had been 107, 88, and 89 in the three preceding weeks, further declined last week to 63, and were 30 below the number in the corresponding period of last year. The causes of 16, or more than 3 per cent., of the deaths registered in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 19·0, 19·4, and 19·3 per 1000 in the three preceding weeks, declined to 17·2 per 1000 during the week ending June 17th. During the past four weeks the death-rate has averaged 18·7 per 1000, the rates during the same period being 14·1 in London and 16·2 in Edinburgh. The 125 deaths of persons belonging to Dublin registered during the week under notice were 15 fewer than the number in the preceding week and included three which were referred to the principal infectious diseases, against four, eight, and five in the three preceding weeks; of these, two resulted from whooping-cough and one from diphtheria, but not any from small-pox, from measles, from scarlet fever, from "fever," or from diarrhœa. These three deaths were equal to an annual rate of 0·4 per 1000, the death-rates last week from the principal infectious diseases being 1·2 in London and 2·6 in Edinburgh. The two fatal cases of whooping-cough corresponded with the number in the preceding week. The 125 deaths in Dublin last week included 17 of children under one year of age and 27 of persons aged 60 years and upwards; these numbers were respectively five and 24 below those recorded in the preceding week. Five inquest cases and two deaths from violence were registered; and 56, or nearly 45 per cent., of the deaths occurred in public institutions. The causes of three, or more than 2 per cent., of the deaths registered in Dublin last week were not certified.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

THE following appointments are notified:—Staff Surgeons: G. Ley to the *Juno* and H. L. Penny to the *Argonaut*, on recommissioning. Surgeons: W. B. Maurice to the *Egmont* for the *Maine;* J. S. Dudding to Haslar to assist in instruction of surgeons on entry; and C. M. Woods to the *Juno*, on recommissioning.

ROYAL ARMY MEDICAL CORPS.

Lieutenant-Colonel J. G. MacNeece, from Dublin, has been appointed Principal Medical Officer at Malta, with pro motion to Colonel. Lieutenant-Colonel H. W. Hubbard takes up temporary duty under the Director-General of the Army Medical Service. Captain E. C. Hayes is appointed member of a medical board for examination of university candidates for commissions in the Regular Army.

VOLUNTEER CORPS.

Rifle: 20th Middlesex (Artists'): Surgeon-Captain H. D. Brook to be Surgeon-Major (dated May 29th, 1905).

ROYAL ARMY MEDICAL CORPS (VOLUNTEERS).

Seaforth and Cameron Bearer Company: John William Mackenzie to be Lieutenant (dated June 17th, 1905).

ROYAL ARMY MEDICAL CORPS EXAMINATION.

An examination of candidates for not less than 40 commissions in the Royal Army Medical Corps will be held on July 27th next and following days. Applications to compete should be made to the Secretary, War Office, 68, Victoria-street, London, S.W., not later than July 17th, on which date the list will be closed. Candidates who are over the regulated limit of age at the date of the examination will be permitted to deduct from their actual age any period of service in the field after Oct. 1st, 1899, that they could reckon towards retired pay and gratuity if such deduction will bring them within the age-limit. The presence of candidates will be required in London from July 25th.

THE JOURNAL OF THE ROYAL ARMY MEDICAL CORPS.

The June number of this journal is a good one and is well illustrated with plates, diagrams, and tables. Among the original communications and clinical and other notes we may call attention to the article by Lieutenant-Colonel A. M. Davies, R.A.M.C., dealing with the Direct Transmission of Enteric Fever, to the continuation of Researches on Malaria contributed by Major Ronald Ross, C.B., F.R.S., D.Sc., and to the paper On the Further History of Five Cases of Arterio-venous Aneurysm of the Neck, with some Remarks on the Condition Generally and its Treatment, by Mr. G. H. Makins, C.B., F.R.C.S. Eng., surgeon to St. Thomas's Hospital. There are several other papers which are also well worth reading.

VENEREAL DISEASE IN INDIA.

The Army Medical Report for 1903, just issued and dealt with in another column (p. 1740, contains a table showing the admission-rates for all forms of venereal disease per 1000 of strength of European troops serving in India from 1897 to 1903. From this it will be seen that there has been on the whole a large decrease of this class of disease since 1899. Notwithstanding this reduction, however, and despite the efforts of the military and medical authorities, the admission-rate for 1903 was still as high as 249·5 per 1000.

THE WAR IN THE FAR EAST.

There is an absence of any trustworthy news regarding the peace negotiations. There are no signs of any immediate armistice; on the contrary, Marshal Oyama has apparently commenced his final movement against General Linievitch and the greatest battle, as far as stupendous numbers are concerned, remains to be fought. Will it prove to be a final *débâcle* like that of Sedan? As far as can be gauged by what has appeared in the Tokio press public opinion in Japan is, and quite naturally, strongly opposed to any armistice. Nothing will now satisfy Japan short of granting her the full rights of a victor and the placing of peace in the Orient on a durable and permanent basis. The Japanese leave nothing to chance and their success has not simply been the result of their patriotic courage but of the application of science to the art of war, and in no respect, perhaps, has this been more observable than in their medical, sanitary, and hospital arrangements.

PROPOSED NATIONAL LEAGUE FOR PHYSICAL EDUCATION AND IMPROVEMENT.—On Wednesday, June 28th, at 4.15 P.M., at the Mansion House the Lord Mayor will preside at a public meeting with the object of forming a league to stimulate public interest in the physical condition of the people throughout the kingdom; to establish close association and centralisation of all societies and individuals trying to combat such influences as tend to produce national physical deterioration; to aid existing organisations; and to start organisations for physical health and well-being wherever none exists. The movement will be on strictly non-political and undenominational lines and the council is formed of representatives of all orders, professions, and institutions throughout the kingdom. Further information can be obtained on application to the interim secretaries, care of Twentieth Century League, 28, Victoria-street, London, S.W.

Correspondence.

"Audi alteram partem."

THE METROPOLITAN HOSPITAL SUNDAY FUND.

To the Editors of THE LANCET.

SIRS,—The approach of Hospital Sunday must be my plea for urging, as president and treasurer of the Hospital Sunday Fund, that the public should respond in a liberal spirit to the appeal which will be made to them on Sunday next in all the places of worship of the metropolis on behalf of the hospitals and dispensaries for the treatment of the sick poor.

This year the council has 220 institutions seeking to participate in the Fund. The needs of all these charities, if only to reimburse them for last year's outlay on the London poor, would not be covered by £100,000.

Mr. George Herring has again promised to add 5*s.* to every sovereign raised this year in places of worship or in the City up to a total of £100,000. This means that the hospitals can receive up to £125,000 towards the maintenance of their patients (not anything for building). The whole collection last year was £63,000.

There are 10,000 beds in the various London hospitals and 105,000 in-patients occupied them last year.

There is happily no necessity for me to enlarge on the merits of these institutions, but I desire to point out the unique character of this annual collection and the opportunity it affords for unostentatious and practical sympathy in a cause self-sacrificing beyond dispute.

Every inhabitant of the metropolis, irrespective of creed, is offered the privilege to easily gratify his sympathy with the suffering poor. He is not subjected to pressure, and of imposture there can be no fear.

Should any of your readers be absent from public worship, or not in London on Sunday next, they may remit their contributions to me at the Mansion House.

I am, Sirs, yours faithfully,

JOHN POUND, Lord Mayor.

The Mansion House, E.C., June, 21st, 1905.

INFANTILE SPLENIC ANÆMIA.

To the Editors of THE LANCET.

SIRS,—Having read the extremely interesting and carefully investigated case of Infantile Splenic Anæmia, recorded by Dr. S. G. Scott and Dr. W. H. Maxwell Telling in THE LANCET of June 17th, p. 1638, I should like to point out that, as it seems to me, the case belongs to a group which is by no means limited to infants. In fact, there appears to me nothing peculiarly "infantile" in the main features of the case except the fact that the patient was a baby. The case fits in with some of those which have been described in Germany under Leube's heading "leukanæmia" and in France by Vaquez and others as "myeloid splenic anæmia." In this group grave anæmia, with or without a moderate increase in the total number of white cells, is combined with "myeloid" changes in the spleen, &c. In my case of leukanæmia, described in the Transactions of the Pathological Society of London (1904, vol. lv., p. 288), the patient was a man, aged 58 years. There was at one time an absolute leucopenia, yet at the necropsy the enlarged spleen and liver were found loaded with erythroblasts, myelocytes, and large mononuclear cells, the liver in addition containing a considerable number of giant cells. The enlarged hæmolymph glands, besides lymphocytes and erythrocytes, contained erythroblasts and large mononuclear cells similar to those permeating the splenic pulp and likewise a few coarsely granular eosinophile cells and giant cells. In my case the bone marrow had undergone a connective-tissue change which, though probably not an essential feature of such leukanæmia cases, doubtless contributed towards the transformation (reversion) of the spleen and liver into blood-producing organs. On the whole, it seems likely that cases of leukanæmia in adults similar to mine are to be regarded as instances of grave anæmia from any cause in which the spleen, and sometimes the liver and some of the lymph glands, undergo a myeloid transformation which is partly of a compensatory nature. According to Dr. Scott and Dr. Telling it also appears that at least some cases of grave "splenic anæmia" in infants are to be explained in the same way.

I am, Sirs, yours faithfully,

Harley-street, W., June 17th, 1905. F. PARKES WEBER.

THE PRINCIPLES OF HEREDITY.

To the Editors of THE LANCET.

SIRS,—It is hardly fitting that I should enter into a discussion concerning the demerits of my own book. But perhaps Mr. M. D. Eder will allow me to trespass a little on his kindness. He states that "a Bolivian garrison on the upper Amazon, to which I had been sent as medical officer, was besieged for six months. The garrison consisted originally of some 350 Bolivians, mainly Indians, and some 40 civilians, North Americans, Italians, Swiss, &c. Beri-beri broke out during the siege, a disease unknown both to the Indians who were from the Bolivian highlands and to the Europeans. Although all were exposed to similar conditions, insufficient food, sleep, &c., over 100 of the Indians died, whilst of the Europeans only one had it (mildly) after having been taken prisoner and severely ill-treated."[1] The remarkable circumstance here is not that the Indians suffered greatly under the very severe conditions but that the Europeans did not. Observers seemed tolerably agreed that in other parts of the world Europeans have no special immunity. For example, to quote Sir Patrick Manson: "*Race.*—This has probably no influence one way or another further than that the superior hygienic conditions of the European in tropical climates imply a less frequent and less intense exposure to the specific cause than is the case with the coloured native. The European enjoys no absolute immunity; under suitable conditions he contracts the disease readily enough."[2]

Assuming that Mr. Eder is not mistaken in his observations it would seem, then, that there is some surprising peculiarity in the waters of the Upper Amazon or the neighbourhood which confers all but absolute immunity on Europeans, even under the most "suitable conditions," though not on the natives. If Mr. Eder could amplify his account so as to elucidate this interesting point he would confer a valuable service on science and humanity.

I am, Sirs, yours faithfully,

Southsea, June 18th, 1905. G. ARCHDALL REID.

To the Editors of THE LANCET.

SIRS,—I have not yet read Dr. Archdall Reid's new book and therefore hold no brief for it, but Mr. M. D. Eder's criticisms seem themselves to require some explanation. For instance, the fact of drunken *individuals* being found among the Jews is supposed to controvert a general principle that the Jews as a *race* are not hereditarily drunken. Surely it is recognised by us all, whether we agree with Dr. Reid or not, that a man may obtain from out of his environment that which has not descended to him from his ancestors. And I think, moreover, that as a fact, and quite apart from any biological significance it may have, it is universally admitted that the Jews as a race *are* exceedingly moderate drinkers.

With regard to malaria, Dr. Reid's critic is not justified in attempting to demolish the law of the establishment of immunities (by continuous elimination of the unfit) by saying that under this law the English should now be malaria proof, because "until quite recently malaria was very prevalent in our island." First of all, malaria was never general in England; it was confined within comparatively narrow limits over what in those days was a very isolated tract of country, inhabited by an exceedingly sparse population. We know, too, that up to comparatively recent times—a century at the outside—it was the habit of the people of the countryside to remain strictly within the confines of their own valleys, hills, or marshes, and we know that up to 50 years ago or thereabouts the inhabitants of definite localities were much in-bred in consequence. Therefore any immunity derived from long contact with the disease would be strictly limited to an exceedingly narrow section of our population, and that, too, a section which hardly supplies the probable visitors to malarial countries. At any rate, if it does it is quite fair to assume that the few impervious members of the white communities so situated are derived from it and that the susceptible persons are derived from that greater mass of

[1] THE LANCET, June 17th, 1905, p. 1676.
[2] System of Medicine, Allbutt, vol. ii., p. 459.

Englishmen which has never been exposed to the malarial influence.

Shifting his ground, Mr. Eder says: "There is nothing to suggest that the parasite that once flourished here was different from that now existing in other countries." Then why does he suggest it? As a matter of fact, it is a suggestion well worth our consideration, judging from the analogies presented by proved and established conclusions as to the effects of different environments upon the *causæ causantes* of other parasitic diseases. It is quite conceivable that the malaria parasite in this country was as modified in its relation to the malaria parasite of the West Coast as the red grouse of Scotland is modified from the willow grouse of the continent. I am, Sirs, yours faithfully,

June 19th, 1905. W. GEORGE CRESWELL.

To the Editors of THE LANCET.

SIRS,—I observe that Mr. Eder (in his letter on the above subject published in THE LANCET of June 17th, p. 1675) repudiates the principle of natural selection, denies that heredity has any influence in the causation of tuberculosis, and even doubts whether it plays a part in causing insanity. May I ask his reasons?—I am, Sirs, yours faithfully,

Wimpole-street, W., June 19th, 1905. HARRY CAMPBELL.

THE CENTRAL MIDWIVES BOARD AND THE BELFAST UNION MATERNITY HOSPITAL.

To the Editors of THE LANCET.

SIRS,—I have read with much interest and appreciation your very just and well-deserved strictures on the action of the Central Midwives Board towards the Belfast Maternity Hospital in refusing to recognise the nurses who have been trained there. Allow me to bring to your notice what seems to me its equally unjust and harsh action in regard to the nurses trained in the Belfast Union Maternity Hospital.

This hospital has been recognised by the Central Midwives Board as a training school for the future as the conditions existing there fulfil all its requirements, but it has refused to enrol any of the nurses trained in this hospital prior to March 31st of this year, except those who were in *bonâ-fide* practice for one year prior to the passing of the Act and (this is what makes it so absurd) who had exactly the same training as those who were refused. The Central Midwives Board has taken this action notwithstanding that it was pointed out to it: (1) that no change has been made in the conditions of training in this hospital for the past ten years, except that formerly the period of training was six months instead of three as required by the Central Midwives Board; (2) that all these nurses before obtaining certificates had to pass the very severe examination of the Ulster Examining Board of Midwifery, a board composed of such eminent men as Professor J. W. Byers, Dr. John Campbell, Dr. Brice Smyth, Dr. Alexander Dempsey, Mr. Andrew McConnell, Mr. Robert Hall, and Dr. J. Lynass, all of them, except the last three, being unconnected with the hospital; (3) that all these nurses prior to beginning their obstetrical course had had two years' medical and surgical training and passed a searching examination in these subjects; and (4) that many of the nurses go each year to England to follow their profession.

It seems to me that no nurses could undergo a more thorough preparation, that this is the class of nurse the Midwives Act was intended to encourage, and that a great injustice has been done by the Central Midwives Board in refusing to place these thoroughly trained and experienced nurses on its roll of certified midwives.

I am, Sirs, yours faithfully,

JOHN MCLIESH, M.B., D.P.H. R.C.P.S. Irel.,
Physician in Charge of Belfast Union Maternity Hospital.

Belfast, June 17th, 1905.

DEATH CERTIFICATION.

To the Editors of THE LANCET.

SIRS,—All who correctly appreciate the national value of accurate and uniform certification of causes of death to public health and sanitary progress must feel grateful to "A Provincial Surgeon" for his timely and useful suggestion, in THE LANCET of June 17th, p. 1677, that every medical student should receive, before completing his curriculum, systematic instruction as to the manner of filling up death certificates and for calling the attention of medical practitioners to the gravity of their responsibilities to the public, imposed upon them by statute, to certify "to the best of their knowledge and belief" the cause of death of each patient attended by them during his or her last illness. There can be do doubt that this responsibility has recently been rendered increasingly onerous, among other causes, by the phenomenal development of industrial insurance, which has to a great extent degenerated into a most dangerous form of gambling. It is an open secret that medical practitioners are now frequently urged by relations or friends of deceased patients to certify the cause of death in such a way as not to endanger the payment of insurance money or even to alter a certificate accurately filled up in order to facilitate the payment of such money. This and other unpleasant and inconvenient consequences of the responsibilities to which "A Provincial Surgeon" calls attention appear to have borne fruit in the deliberate and startling suggestion to eliminate the Cause of Death column from the death register. That such a fatal blow to sanitary progress would ever be sanctioned by statute it seems impossible to believe. It would, however, be well for those who have favoured this suggestion to consider seriously what its effect would be on public health administration.

While fully recognising the value of your correspondent's letter it is impossible to endorse his opinion that the present system of death certification, governed by the Births and Deaths Registration Act, 1874, "would be absolutely perfect" if the medical practitioner, the legal informant of the death, and the registrar were to carry out their respective duties in strict accordance with that Act. It has long been urged and fully admitted by all those interested in public health and in the value of mortality statistics that the Act referred to urgently requires amendment, at any rate, in the following directions: (1) to secure the due certification of the cause of death of any person dying without the attendance during his or her last illness of a registered medical practitioner, if an inquest is not held concerning such death; and (2) to secure the more satisfactory certification and record of all alleged cases of stillbirth. I am, Sirs, yours faithfully,

Surbiton, June 20th, 1905. NOEL A. HUMPHREYS.

MEDICAL CERTIFICATES IN RESPECT OF SCHOOL ATTENDANCE.

To the Editors of THE LANCET.

SIRS,—In THE LANCET of May 27th, p. 1442, you have an annotation with the above title upon the fees offered by the Kent education committee to medical men for supplying certificates of sickness to parents whose children are unable to attend school. I should like to state that I am in entire agreement with the remarks you have made on the subject and to point out that the fee which this division of the British Medical Association proposed as suitable for acceptance by medical men was 2*s.* 6*d.* for examination and certificate at the house of the medical man and 5*s.* if a visit were necessary to the child's home. I am induced to publish our conclusions in the hope that further action by education committees in the future may be met in a similar way in other parts of the kingdom to prevent the evils you have pointed out.

I am, Sirs, yours faithfully,

OSBORNE D. MARRIOTT, M.D. Glasg.

Sevenoaks, June 19th, 1905.

A NEW ELECTRO-CYSTOSCOPE.

To the Editors of THE LANCET.

SIRS,—Under this title Dr. W. K. Otis of New York describes his new cystoscope in THE LANCET of June 10th. He claims that the area visible with his cystoscope is as large as the ring A (diameter 75 millimetres) and with a Nitze-Leiter cystoscope as small as the ring B (diameter 43 millimetres). As far as the instruments made by Leiter are concerned this is a mistake, as the diameter of the area seen is 65 millimetres, while the prism is at a distance of 40 millimetres from the object. Dr. Otis's instrument does, therefore, not give a field four times as large, as he claims; it is only 1·3 times as large.

The diameter of the field has been altered twice in the Nitze-Leiter cystoscopes. When they were first brought out

17 years ago it was rather narrow, but a few years afterwards the lenses were altered at the instigation of Mr. E. Hurry Fenwick and the diameter of the field was for many years quite as large as that of Dr. Otis's instrument; but it was found that better optical results—i.e., a more perfect and uniform sharpness over the whole field—could be obtained by reducing the field a little and other lenses were therefore adopted a few years ago. Nearly all the European cystoscopes of normal size give now the same size field of 65 millimetres diameter.

It seems to me that the Nitze-Leiter cystoscope which Dr. Otis compared with his new instrument must have been an old pattern. The other improvements which he mentions—i.e., the possibility to inflate the bladder with air, to withdraw the whole optical apparatus to wash out the bladder, and cold lamps with central pin contact—have been in use here some years already.

I am, Sirs, yours faithfully,

New Cavendish-street, W. K. SCHALL.

THE ALTERED TREATMENT OF PNEUMONIA DURING THE LAST QUARTER OF A CENTURY.

To the Editors of THE LANCET.

SIRS,—I can confirm Mr. H. Ivers Kirkpatrick's statement in THE LANCET of June 10th, p. 1609, as to the good results obtained by blistering in pneumonia. For the last 30 years I have invariably applied this form of counter-irritation and the longer I live the more convinced I am of its efficacy in most cases (not all). As a country practitioner in my early career I found pneumonia and pleurisy to be the most common of the acute diseases and had many cases through my hands in 14 years. These were chiefly of the sthenic or active type, attended by well-marked physical signs and often urgent symptoms. When the disease was in the second stage of hepatisation and the patient was distressed by dyspnœa, pain and cough I found a fly blister applied at bedtime and kept on all night to have a marked effect in relieving such symptoms, and in the following 36 hours auscultation would reveal the vesicular breathing returning as the first sign towards resolution. I can recall more than one case, apparently desperate, where the consultant held out no hope of recovery, but which pulled through with this treatment and the aid of brandy to keep the heart going whilst the disease subsided. When I mention this treatment to a *confrère* I am generally met with a faint smile and the remark that "blistering is not necessary." I will, however, trust the "bridge that bears me safely over." The emp. lyttæ spread on sticking plaster, leather, or thick brown paper acts better than any liquid vesicant. It is longer in its action but more pronounced in its effect of causing absorption of the exudation in the air cells.

I am, Sirs, yours faithfully,

June 12th, 1905. CYCLOPS.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

Hospitals and Endowments.

ONE rarely looks at a hospital report without finding two statements. The first is that the work has increased and is still increasing; and the second is that funds are wanted so that the work may be carried on. Two recent cases may be taken. During the present month an appeal from the committee of the Ancoats Hospital for £15,000 appeared in the papers. It is an admirable institution, with 114 beds and cots, with wards for men, women, and children, and a convalescent home near Alderley Edge for 26 patients. This home was built, "through the great generosity of an anonymous friend," on land given by the Lewis trustees, and also equipped at a cost of £12,000. The convalescent home is found to cost in maintenance about £800 a year. The committee "wish to collect at least £15,000—£10,000 to form an endowment fund for the convalescent home and the remainder to clear off the debt." The other case is that of the Children's Hospital. The inpatient department at Pendlebury can admit 168 patients and is well known to be one of the best in the kingdom, but the out-patient department at Gartside-street, which was built 30 years ago, is "wholly inadequate to meet the demands on it." In order to bring the latter up to the condition necessary to meet these demands and to remedy imperfections at Pendlebury, "the public of 'Greater Manchester' is being asked to subscribe £20,000." It is not only right but very desirable to devote a considerable sum to form an endowment fund, as the Ancoats Hospital is attempting to do for its convalescent home. An endowment fund is also being formed in aid of the Delamere Sanatorium for Consumption which was built by the munificence of Mr. W. J Crossley. A question arises on which there may be differences of opinion but it is one that deserves consideration as to whether a new charity should be established without reasonable endowment. A rich man or a generous public builds a hospital and equips it and so far a good work has been done, but without more money it is useless. Is it quite the best way of doing good to saddle posterity with the maintenance of a charity in the establishment of which they have had no voice? The locality may remain prosperous or otherwise and if bad times come there is the unhappy spectacle of a hospital striving to keep open its doors, for the calls on it for aid are then the most numerous and urgent when its resources are steadily diminishing. There would always be plenty of outlets for the bounty of the charitably disposed even if the hospitals were in less dire straits financially than most of them seem to be at present.

The Manchester Volunteer Medical Corps.

For the last week or ten days Manchester and the Lancashire towns generally have been much given up to making holiday. The people pour out in their thousands to the various holiday resorts, chiefly those at the seaside, such as Blackpool and the Isle of Man (to name two only), so that the dwellers therein have had abundant opportunities of hearing their native tongue "as Lancaster doth speak" it. The volunteers, to their great credit, have been doing work, and hard work, in North Wales, at Bare, and on Salisbury Plain. But the Manchester Medical Corps is the only one that specially concerns our profession. The volunteers generally seem to have received a good deal of praise and it is gratifying to know that the "medicals" came in for a very fair share of it. About 600 of them were paraded on Salisbury Plain on June 15th and were inspected by Colonel May, the principal medical officer of the Southern District, who highly commended them for their smartness. He saw them go through various exercises. They marched past with transport wagons and full equipment and then he expressed his satisfaction with what had been done, adding that "his only regret was that they were only constituted for home service." Upon this Lieutenant-Colonel W. Coates, who has done so much for the Manchester Corps, asked how many men would volunteer for foreign service in case of need, and the answer came that the whole of them were willing to go. We are, by other nations and by many in our own land, not esteemed as a military people but the patriotic spirit and the sense of duty which this incident displayed may be looked on as showing that with a little encouragement instead of the systematic discouragement which the Volunteers are said to have received for some time past, the number of our defenders might be very greatly increased. Colonel May also inspected the lines and saw bearer companies at work under the direction of Major J. J. K. Fairclough and the field hospital work carried out under Major Mann. In the afternoon the annual sports in connexion with the Royal Army Medical Corps (Volunteers) took place and the prizes were afterwards presented by Colonel Coates.

Plague in Manchester.

The occurrence of a case of plague in Manchester has startled quiet citizens and the event has been chronicled by newspapers all through the country. It is hoped, however, that the calamity will go no further than it has done already. The official statement issued on June 15th did not say whether the sick man had come to his home in Manchester by boat, up the Ship Canal, or by train, but simply that the assistant cook on a vessel which arrived at Middlesbrough from Buenos Ayres *viâ* Hamburg on June 8th was taken ill on June 9th and died on the 12th. On the 9th he was so ill that Mr. J. Tempest of Whalley Range was called in to see him. He at once communicated with Dr. T. C. Railton, the medical officer of Withington, and Dr. J. Niven, the medical officer of Manchester, who on examining the patient agreed with Mr. Tempest that the case was one of bubonic plague. The patient was at once removed to the Monsall Hospital where he died on the

morning of June 12th. The diagnosis was confirmed by Professor S. Delépine and the medical officer at the hospital, and in London by Dr. Klein, acting on behalf of the Local Government Board, who made independent bacteriological examinations. All necessary measures have been taken to prevent the spreading of the disease and there seems to be no reason to fear any further outbreak. It is stated that in consequence of dead rats being discovered on board measures were taken to destroy all rats and to disinfect the ship. Precautions have been taken at Middlesbrough as well as in Manchester to guard against the extension of the disease. The Ship Canal was, of course, suggested to many minds as the route by which the plague would come to Manchester, but the patient, a lad 17 years old, after leaving his ship at Middlesbrough, travelled on the Thursday night by train to Manchester and reached his home on the morning of Friday, June 9th. The house was thoroughly disinfected "and so also were all the persons with whom he had come in contact." There seems no cause, therefore, for any general alarm and there is no evidence that any is felt.

June 20th.

WALES AND WESTERN COUNTIES NOTES

(FROM OUR OWN CORRESPONDENTS.)

Sanitation in the Rhondda Valleys.

THE Parliamentary Bill promoted by the Rhondda urban district council, which has now passed the House of Commons and which is passing unopposed through the House of Lords, is of special interest because it is not many years since Dr. R. Bruce Low made a very detailed inspection of the district in consequence of a representation addressed to the Local Government Board by the Glamorgan county council to the effect that the Public Health Acts had not been properly enforced in the district. Dr. Bruce Low did not endorse this grave conclusion of the county council but he pointed out a series of insanitary conditions which required to be remedied. Within the last few years much has been done in the direction indicated by the Board's inspector. Extensive sewers have been laid, water carriage is almost universal, a well-equipped isolation hospital has been erected, and a refuse destructor has been installed, and when the provisions of the district council's Bill are in force many difficulties in administration will be swept away. Great difficulty was often experienced in compelling owners of property to pave backyards unless a very distinct nuisance could be proved but the Bill empowers the council to require the paving of these yards to the extent of 150 square feet. The clauses referring to infectious diseases include a prohibition of infected persons carrying on any trade or business in such a manner as to be likely to spread infection, the council having authority to compensate any person affected by this prohibition. The same clauses confer (1) power on the medical officer of health to examine school children and to exclude them from attendance at school, parents and others being liable to a penalty if they send an excluded child to school without the permission of the medical officer of health; (2) power to require from school teachers lists of the names and addresses of children in attendance at school, suitable payment being made; (3) power to require the disinfection of all infected articles; and (4) power to provide nurses for attendance upon any person suffering from an infectious disease in the district. Dairymen who supply milk within the district are required to notify to the medical officer of health all cases of infectious disease among persons engaged in their dairies and they must also report the existence of any case of tuberculosis of the udder among their cattle and they are prohibited from selling for human consumption the milk of any cow suffering from tuberculosis of the udder. A very important provision of the Bill requires a common lodging house and the keeper of such a house to be registered for one year only and enables the council to refuse to re-register at the end of each year either the house or the keeper. Existing registered houses are affected by this clause. An attempt has been made to deal with the vexed question of combined drains by empowering the council in certain circumstances to require two or more houses to be drained by means of one drain but it is specifically stated that this is to be considered a drain and not a sewer. The difficulties attending the enforcement of Section 19 of the Public Health Acts Amendment Act, 1890, are overcome by extending the powers given by that section in relation to two or more houses belonging to different owners so that they shall apply to two or more houses belonging to the same owner.

Typhoid Fever at Bridgend.

There is some evidence of an abatement of the epidemic of typhoid fever at Bridgend. During the first week in June 17 cases occurred, making a total of 46 cases between May 20th and June 10th. The patients are distributed all over the town, about half a dozen being among the well-to-do and the remainder are of the working class. The house drains of the houses concerned are all connected with the sewerage system of the town. The main sewer outfall discharges directly into the sea, but for some time past, during the carrying out of repairs at the outfall, the sewage has been discharged into the river about one and a half miles below the town. In a special report upon the outbreak the medical officer of health (Mr. Wyndham Randall) gives sufficient reasons for excluding the water-supply, milk, or shell-fish as a cause of the epidemic. By a process of exclusion he attributes the outbreak to the exceeding dryness of the early months of the year indirectly leading in some way to the specific pollution of food.

Water-supply of Glamorganshire.

Although the rainfall in many parts of the county of Glamorgan is considerably above the average of the rest of England and Wales there are some districts which are very inadequately supplied with water. There is quite enough water but difficulties are found in securing proper storage grounds especially in the coal fields. In order to consider what steps should be taken to remedy the conditions indicated a committee of the county council recently decided to confer with the sanitary authorities and to discuss the desirability of forming a water board for the whole county.

Health of Cornwall in 1904.

The annual report of the sanitary committee of the Cornwall County Council, which has just been issued, states that the rural population was 186,376 and the urban population 136,329. During the year 1904 there were 7201 births registered, giving a rate of 22·31 per 1000, against 22·69 for 1903. The total number of deaths registered was 4752, giving a general death-rate of 14·72 per 1000, compared with 14·21 for 1903; the separate death-rates of the rural and urban districts were 14·12 and 15·54 per 1000 respectively. 185 deaths occurred from zymotic diseases (equal to a rate of 0·573, against 0·357 in 1903). 806 deaths were those of children under one year (inclusive of 149 premature births), equal to 111·92 per 1000 births. 428 deaths were due to phthisis and 106 to other forms of tuberculosis, compared with 445 and 106 respectively in the previous year.

Taunton Isolation Hospital.

At the meeting of the Taunton town council held on June 13th considerable discussion took place over the action of the Taunton rural district council in reference to the management of the joint isolation hospital, this action having led to the resignation of Dr. H. J. Alford, the medical officer of that institution. At a previous meeting, as already mentioned in THE LANCET of May 27th, p. 1462, the town council had decided to terminate the dual control of the hospital and Dr. Alford had decided to continue to hold his appointment under the town council. The rural district council, in a letter which was read at the meeting, refuses to consider any question of severing the joint management of the hospital and suggests that the whole subject should be referred to the Local Government Board. The town council eventually decided to ask the Local Government Board to hold an inquiry into the matter.

June 19th.

SCOTLAND

(FROM OUR OWN CORRESPONDENTS.)

"Medicine: the Mother of Many Humbugs."

THIS was the title of a lecture advertised to be delivered in the Queen's Hall, Edinburgh, on June 13th by the Rev. H. E. Cantel, who was described in the posters as "Overseer for the United Kingdom of the Christian Apostolic Church in Zion." This lecture was the fourth of a series delivered in the Queen's Hall, the previous three not having attracted any special attention. The theme of

the fourth lecture attracted the attention of the medical students and some hundreds of them were present at the place of meeting. They were quite decorous in their behaviour for some time but when it became known that the lecturer was not to appear they burst into the hall and conducted themselves in that riotous manner which in past times was not uncommon but which has been rare in recent years. They destroyed many of the hall fittings and eventually found themselves in collision with a considerable body of policemen, who finally had to charge them with their batons. Several students were injured and eight were arrested. This type of rowdyism is of course strongly to be condemned and, fortunately for the sake of Edinburgh and her medical students, it is now of very rare occurrence.

University of Edinburgh: Resignation of Professor Simpson.

It has been unofficially known for some time that Dr. A. R. Simpson, professor of midwifery and diseases of women and children, proposed to resign his chair. At the meeting of the University Court on June 12th an application was received from Professor Simpson for permission to retire from the chair as at August 31st next. Professor Simpson has occupied the chair for over 30 years and notwithstanding the immense changes and advances which have been made, especially in gynæcology, in that time he has kept well abreast even of this department and is recognised by his colleagues as an able, expert, and successful operator. It is hoped that if the resignation be permitted there may be important changes in the chair. It is universally held that both gynæcology and diseases of children ought now to be separated definitely from obstetrics, and it is hoped that the University may be able to carry through this very important and pressing change. There ought to be no difficulty from the financial side in carrying through the changes indicated, for chairs which carry with them a status in departments of the practice of medicine or surgery do not necessarily require endowments.

Fourth Centenary of the Royal College of Surgeons of Edinburgh.

The preparations for this celebration are being rapidly completed. Invitations have been issued for the commemoration ceremony which is to be held in the McEwan Hall on Thursday afternoon, July 20th. On that occasion the body of the hall will be reserved for representative bodies who are requested to attend in academic costume or uniform. Invitations have also been issued for a reception in the Royal College of Surgeons on the evening of the same day; the reception is given by the President and Fellows of the College. There is further to be a garden party on the afternoon of July 21st in the grounds of George Heriot's Hospital, the invitations in this case also being sent out in the name of the President and Fellows of the College.

Glasgow and District Branch of the National Association for the Prevention of Consumption and other Forms of Tuberculosis.

The fourth annual general meeting of this branch was recently held in Glasgow. The council reports that during the past year public meetings have been held at various centres with the object of instructing the public and encouraging individual effort to prevent the spread of the disease. Signs are not wanting to show that the public, especially in large cities, are becoming educated to the need of abating the practice of spitting. The Bellefield Sanatorium has been in active operation throughout the year and with very satisfactory results. Since the sanatorium was opened 50 cases have been admitted and 30 have been treated and dismissed, leaving 20 still under treatment. The accommodation for 30, which the present pavilion and chalets afford, has from the first been found quite inadequate for the very numerous applications received. Plans are, however, in course of preparation for the erection of an additional pavilion, together with a laundry and other accommodation. Of course, it is not desirable that patients in the advanced stages of the disease should be admitted to the sanatorium, and in order to help this class of patients it has been determined to institute a dispensary where special advice and treatment may be given to patients suffering from pulmonary tuberculosis. Until funds can be raised to establish, to equip, and to maintain a separate dispensary negotiations have been entered into with the health committee of the corporation, which, it is expected, will result in temporary arrangements being completed which will enable dispensary treatment to be carried on in the meantime.

Reconstruction of the Royal Infirmary, Glasgow.

In THE LANCET of June 10th, p. 1616, attention was drawn to the objections to this scheme which are being raised on the one hand as regards the plans of the new building and on the other hand as regards the damage likely to be done to the appearance of the Cathedral. Within the last few days there has been published in the *Glasgow Herald* a letter dated Jan. 6th, 1903, and written by Dr. James Finlayson, ex-President of the Faculty of Physicians and Surgeons, Glasgow, and at that time a member of the board of the Royal Infirmary, to the chairman of the board. In that letter Dr. Finlayson says: "My opinion all along has been entirely opposed to any scheme for the rebuilding of the infirmary on its present limited area, in which the numbers of the patients were to be increased and in which the difficulties could only be dealt with (I don't say overcome) by piling up six storeys of sick people in such a locality. ..... That 650 sick persons should be piled up in six flats with a dense population of the living on the one side and of the dead on the other, and with chemical and other works in the near vicinity, is a plan against which, as a physician, I must protest." Dr. Finlayson goes on to add that he is entirely in favour of having a central infirmary of limited size on the present site especially for the treatment of accidents. He also approves of rebuilding the front or south house as a new surgical house with every modern idea carried out, leaving the north house, which is little more than 40 years old, for medical wards. The letter concludes with the remark that "extensions of hospital accommodation should clearly be sought elsewhere."

Defective Hearing among School Children.

At the annual meeting of the friends and supporters of the Glasgow Ear Hospital Dr. T. Barr pointed out that one-third of the patients treated during the year were children under 15 years of age. Most of these children were suffering from adenoids which not only produced mouth breathing and ear disease but also in many cases had a dulling effect on the intellectual faculties. There was no doubt that the 892 children who had come for treatment formed a very small proportion indeed of the school children who were suffering from these conditions and who were thereby placed under a great disadvantage at school. Of 600 children examined by Dr. Barr some time ago in connexion with two board schools in Glasgow about 25 per cent. were found to be suffering from more or less defective hearing associated in many cases with nasal obstruction. What a serious effect this must have upon the education of a child one can understand when one bears in mind that the organ of hearing is really the organ of education and the chief medium through which children at school receive their mental impressions.

Burial Reform in Scotland.

The movement in favour of cremation seems to be gaining ground in Scotland. The Scottish Burial Reform and Cremation Society, Limited, reports that 22 cremations were carried out at Maryhill during the year, making 167 since the opening of the crematorium. It was pointed out at the general meeting of the society that what occurred was really a decomposition of the body by hot air, and that there was nothing in the process from which the most sensitive mind could recoil. Those who advocate this method of interment are convinced that it only needs a little further enlightenment on the part of the public to make it more popular. The small cost is certainly in its favour, 30s. being charged for cremation, and this includes half a square yard of ground which would contain the ashes of a family. From the sanitary point of view the method has everything to commend it, and when the public come to realise this and overcome their prejudice against it no doubt it will be universally adopted. It is worthy of note, and as it should be, that at the general meeting of the society the adoption of the report was moved and seconded by medical men.

Montrose Asylum Board.

The annual general meeting of the managers of the Montrose Asylum and Infirmary Board was held in Montrose on June 13th. Dr. J. G. Havelock, physician superintendent at the asylum, reported that during the year 66 men and 80 women were admitted, bringing the total number of cases under treatment to 833. 85 inmates were discharged and 37 men and 34 women died. On May 14th last there were on the register 297 males and 380 females—total 677, showing

a decrease of ten during the year. In dealing with the causes of insanity Dr. Havelock, in his report to the managers, says:—

> There is no subject more beset with difficulties than the estimation of the factors which go to produce the complex variety of symptoms and diseases known under the common term of insanity. Two persons were stated to have succumbed to a new disorder, known as "motor mania," a condition said to be induced by the strain of driving mechanically-propelled vehicles on the roads. It is probable that in a large number of cases where the cause of the insanity is attributed to moral and physical agencies the prime factor is a strong hereditary predisposition.

Continuing, Dr. Havelock states that the general health of the patients has been good and that no accident of a serious nature had occurred during the year. At the infirmary the admissions last year totalled 208, a decrease of two; and the number who had received advice and medicine at the infirmary was 1598, a decrease of 129.

Morningfield Hospital, Aberdeen.

The annual meeting of the subscribers was held at the institution on June 7th. The committee of management reported that at the beginning of the year there were in the hospital 77 patients, consisting of 28 adult males, 44 adult females, and 5 children. During the year the committee had under consideration the cases of 35 applicants for admission, of whom 13—namely, 8 adult males, 4 adult females, and 1 child—were admitted. In the course of the same period 8 patients—6 adult males and 2 adult females—died, and 6 patients—5 adult males and 1 adult female—were discharged. The number of patients in the hospital at the close of the year was 76, the average number throughout the year having been 75. During the year the ordinary expenditure on the maintenance and management of the hospital amounted to £2326 10*s.* 6*d.*, while the ordinary income was £1361 15*s.* 4*d.*, leaving a deficiency of £964 15*s.* 2*d.* During the same period legacies were received to the amount of £126 17*s.* 7*d.*, and a special donation of £500 whereby the deficiency was reduced to £337 17*s.* 7*d.* On the other hand, payments were made for additions and alterations to the hospital to the amount of £353 3*s.* 9*d.*, so that during the year the funds of the institution were reduced by a total of £691 1*s.* 4*d.* The average cost of each patient's maintenance during the year was £29 8*s.* 2*d.*, the average daily expenditure per patient having been 1*s.* 7*d.* These figures compared very favourably with those of kindred institutions and the committee was satisfied that the hospital had been maintained and managed with economy. Notwithstanding the economy which had been constantly practised it had been necessary for many years to apply to ordinary expenditure legacies which from their nature ought, in a large measure at least, to have been reserved and added to capital. Even on the assumption that legacies are available for ordinary expenditure, it must be kept in view that they form a very uncertain source of income and one which from various causes had been on the decline. The amount received from legacies last year was £126 17*s.* 7*d.*, as compared with £770 5*s.* 3*d.* in 1903. The ordinary income of the hospital during the year was sufficient for the maintenance of only 47 patients, whereas the average number maintained was 75. In view of the unsatisfactory position of the ordinary income and expenditure, and in order to restore, as far as possible, the large amount of capital expended on the recent additions and alterations to the hospital, the committee issued, towards the close of 1903, a special appeal for increased public support. The appeal, though widely circulated, did not meet with the support that the committee expected; but it was reasonable to hope that those to whom the appeal brought home the urgent need of the hospital for increased support would continue their contributions in the future, and it was the earnest desire of the committee that they would do so. The committee does not suppose that it is the wish of the public that the benefits of the hospital should be reduced, but it cannot be too clearly understood that if the usefulness of the hospital is to be maintained on the existing scale the subscriptions and donations must greatly exceed their present standard.

New Hospital for Peterhead.

On June 17th the foundation stone of the new infectious diseases hospital for the borough of Peterhead was laid with full Masonic honours by Provost Leask. The hospital, which is on the north side of the town, is of the villa type and contains 16 beds, a provision against epidemic disease which the Peterhead community and its worthy provost consider excessive in view of the fact of the freedom enjoyed by Peterhead from epidemic disease.

June 20th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

University of Dublin.

ON June 17th a meeting of the University of Dublin was held in the theatre of the College buildings for the purpose of considering the adoption of the honorary degrees proposed by the Provost and Senior Fellows. The University Caput consisted of the Vice-Chancellor (the Right Hon. Mr. Justice Madden), the Provost (Dr. A. Traill), and the senior master non-regent (Mr. George Cathcart), who presided. It was officially intimated that the following degrees had been accepted by the Senate:—

LL.D.—Margaret Byers, Principal of Victoria College, Belfast; Henrietta Margaret White; Sir Thomas Drew, President of the Royal Hibernian Academy; and the Right Hon. Sir Arthur Wilson, B.A., K.C.I.E.

M.D.—Sir Richard Douglas Powell, Bart., K.C.V.O., President of the Royal College of Physicians of London; and Henry Rosborough Swanzy, M.B., Ophthalmic Surgeon to the Victoria Eye and Ear Hospital and Adelaide Hospital, Dublin.

Sc.D.—Edward A. Schäfer, Professor of Physiology, University of Edinburgh; and Sydney Young, Professor of Chemistry, Trinity College, Dublin.

Litt.D.—William Graham, M.A., Professor of Jurisprudence and Political Economy, Queen's College, Belfast; and the Hon. Emily Lawless, the well-known author of "Hurrish."

Mus.D.—Michele Esposito.

Outbreak of Glanders in Dublin.

In connexion with the recent death of a man infected with the poison of glanders and the leading article in the last issue of THE LANCET showing that the disease was very serious and prevalent in many parts of England, it is unsatisfactory to note that an outbreak of the affection has recently occurred among the horses of a large firm in this city. At a meeting of the public health committee of the corporation, held under the Diseases of Animals Act at the municipal buildings on June 14th, a report of Mr. Watson, M.R.C.V.S., the inspector of the executive committee, was received stating that a serious outbreak of glanders had occurred among the horses of a large city firm. The animals had been tested by hypodermic injections of mallein and in six cases up to the present a positive reaction had resulted. Alderman M'Carthy, J.P., made an order with the authority of the committee that those animals should be slaughtered at once. He stated that, in his opinion, prompt measures should be taken to stamp out the disease which was of such a highly infectious character and was now such a serious menace to the horse owners of the city. The other horses which may have been infected have been removed from their stables to isolated quarters in which they are kept for further observation and re-testing. The stables have been disinfected by the staff of the public health department, all the public drinking troughs in the city have been closed, the county council has been requested to empty those in the county, and, in short, every precaution has been taken to prevent the further spread of the disease.

The Irish Medical Association.

The annual meeting of this association was held in the Victoria Hotel, Killarney, on June 7th, the out-going President, Mr. R. F. Tobin, occupying the chair. The sixty-sixth annual report was submitted and adopted. At the close of 1904 there were 869 members on the roll, being an increase of 35 over the number for the previous year. The accounts closed with a balance of £90 7*s.* 5*d.* but against this sum and the income expected for 1905 liabilities and law costs estimated at £645 must be set. The incoming President, Dr. William MacSweeny of Killarney, delivered his inaugural address, in which he referred specially to the grievances of the dispensary medical officers—their insufficient salary, absence of compulsory superannuation, and want of certainty about annual holiday. He pointed out that their demands were: increase of salary, compulsory superannuation, and compulsory annual holiday. On the motion of Professor R. J. Kinkead (Galway), seconded by Mr. J. J. Curran, the thanks of the association were conveyed to the retiring President, Mr. Tobin. Dr. Macnamara proposed and Professor Kinkead seconded the following motion:—

> That, in the opinion of the meeting, £200 per annum for dispensaries, £120 for workhouse officers, £300 for both, are the lowest salaries that medical men should be asked to work for, but since, owing to the effect of Section 6 of the Local Government Amendment Act, salaries fall on the local rates, members should not be penalised for non-compliance with the Mayo-Ballykillen resolution, pending a settlement of the question.

After some discussion an addition was made that the salary should be satisfactory to the local branch and approved of by the council. Mr. P. Donnellan proposed, and Mr. J. W. Olpherts seconded, the following motion which was carried:—

That the council be instructed to formulate a policy that will enable the association to carry to a successful issue measures which may be adopted for the improvement of members.

After a discussion in reference to the issue of the Irish Medical Directory it was agreed to discontinue its publication. A motion proposed by Dr. Samuel Agnew and seconded by Mr. Olpherts was carried in favour of the appointment of a deputation to wait on the Chief Secretary and bring before him the more serious grievances of the Poor-law medical officers. The resolution also requested the council to make representations to the Local Government Board to lay down a satisfactory basis for the formation of scales of graded salaries. The extraordinary general meeting for the amendment of the articles of association was postponed to October. The annual dinner was held in the evening in the Victoria Hotel, Killarney, Dr. MacSweeny, the President, occupying the chair; there was a large attendance and a pleasant evening was passed. On the next day (Thursday, June 8th) there was an excursion to the famous Gap of Dunloe and in the evening Dr. E. J. McWeeney delivered a lecture on Tuberculosis. It is doubtful whether this last annual meeting will really advance the cause of the Poor-law medical officers of Ireland. A mere repetition of their admitted grievances is not enough; what is wanted is really a lead or some kind of "fighting policy." Beyond the mere resolution in reference to the Medical Directory little else was accomplished except the expression of pious opinions as to the necessity for some strong line of action.

The Direct Representative on the General Medical Council.

Dr. G. E. J. Greene has declined to go forward as a candidate, so up to the present all the candidates in the field are Sir W. Thomson (Dublin), Dr. L. Kidd (Enniskillen), and Dr. R. B. Mahon (Ballinrobe).

An Action against a Medical Man.

In the King's Bench Division, Dublin, on June 9th, an application was made on behalf of Alfred Ernest Tughan to have set aside a verdict obtained by the defendant, Mr. C. K. Darnell of Bangor, co. Down, at the last assizes (March) of Belfast, a full report of which appeared in the columns of THE LANCET. It was an action claiming damages for negligence and it was now sought to have the verdict set aside and a new trial ordered on the ground that it was against evidence and also on the ground of misdirection and non-direction on the part of Mr. Justice Wright who tried the case. After counsel had been heard the Lord Chief Baron Palles, delivering the judgment of the court, refused the application and decided that the verdict must stand.

The Belfast Foreshore Nuisance.

A conference has been arranged between the Holywood urban council and the Castlereagh urban council and the Parliamentary agent of the Local Government Board in reference to the proposed provisional order constituting these two authorities and the Belfast corporation a joint board for dealing with the nuisance existing on the Belfast foreshore.

June 20th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Excision of an Arterio-venous Aneurysm in the Axilla.

AT a meeting of the Surgical Society held on May 31st M. Mignon showed a male patient on whom he had performed this operation. The aneurysm, which was the sequel of an old wound inflicted with a knife in the cavity of the axilla, resulted from a communication of the axillary artery with a collateral external vein. The internal axillary vein was also wounded but arterial blood did not make its way into this vein, which was thrombosed for a distance of four centimetres. M. Mignon applied two ligatures and in the intervening space excised the collateral external vein and the axillary artery for a distance of about two and a half centimetres. Recovery followed without complications, although the axillary artery had been tied in a part of its course where there are no collateral branches—namely, below the inferior scapular, in the portion which is commonly said to be dangerous for ligature. At the present time all the signs of aneurysm have disappeared but the patient has no radial pulse.

Return of Dr. Charcot to France.

Dr. Jean Charcot has had a splendid reception on his arrival in France. When the vessel was off Toulon his friends and a deputation from the Geographical Society of Paris went on board in boats sent by the maritime prefect and the travellers on landing were received at the Mairie. They had an enthusiastic greeting in Paris at the Lyons railway station, where representatives of the Academy of Sciences, the Museum of Natural History, and the Geographical Society had assembled. Dr. Charcot was welcomed by Admiral Humann and then by M. Bouquet de la Grye and M. Perrier in the name of the Institut and of the Museum of Natural History. The Minister of Marine afterwards presented Dr. Charcot with the insignia of Chevalier of the Legion of Honour, at the same time addressing him in complimentary terms. The Geographical Society received Dr. Charcot and his party at a special meeting held at the Sorbonne on June 16th.

Apparatus for Anæsthesia in Operations on the Head, Face, and Mouth.

At a meeting of the Surgical Society held on June 7th M. Delbet showed an ingenious, simple, and practical apparatus for bringing anæsthetic vapours to the laryngeal opening in operations on the face, nose, and mouth. Vapour of chloroform, ether, or ethyl chloride may be employed. The apparatus consists essentially of a flattened hollow plate, shaped like a tongue depressor and jointed in several separate portions at one end, an arrangement which gives it somewhat the appearance of a lobster's tail. This jointed extremity passes over the base of the tongue and resting on the epiglottis forms at the same time a cap over the laryngeal opening and a nozzle for the supply of anæsthetic vapour which is brought through the "lobster's tail" by indiarubber tubes connected with any of the various kinds of chloroform or ether apparatus. For operations on the tongue and on the soft palate, which would be difficult if not impossible with this instrument, M. Delbet has devised a special form which acts on the same principle and can be used easily in such cases.

Neglect to Notify Infectious Diseases.

At a meeting of the Academy of Medicine held on June 6th M. Vaillard complained that non-observance of the law with respect to the compulsory notification of infectious diseases was only too frequent and had a bad effect on the health of the army. At the present time small-pox was rare among soldiers but, unfortunately, the same thing could not be said with respect to measles, scarlet fever, and contagious parotitis, the prevalence of which increased from year to year notwithstanding all the prophylactic measures which were adopted. Statistics showed that the annual numbers of these cases during each of the last 12 years were 6000 of measles, 3513 of scarlet fever, and 11,000 of contagious parotitis. No similar statistics in other countries approached these figures. It seemed to be proved that a soldier very often brought the initial case of an epidemic into barracks after having contracted the disease among the civilian population, either in the garrison town or in a place to which he had gone when on furlough. Epidemics were therefore most commonly met with at the expiry of the leave given at New Year and Easter. Now these initial cases might perhaps be avoided if the military authorities were regularly and accurately informed as to the existence of contagious diseases among the civilian population. It would then be possible for the military authorities to declare an infected part of a town to be out of bounds and to refuse the men permission to visit places where eruptive fevers were known to exist. The prevention of infectious diseases would be easy if the law as to compulsory notification were observed.

Medical Aid for Native Women in Algeria.

In order to provide medical aid for native women who are either unable or unwilling in consequence of their special customs to consult male practitioners the Governor of Algeria is making arrangements for giving advice free of charge in the towns of the colony where the Mussulman population is sufficiently numerous. The practitioners will be females holding the diploma of Doctor of Medicine. The Government will supply them with consulting rooms and the requisite instruments, as well as with medicines for the use of necessitous patients. They will have an annual salary of

2400 francs rising to 2700 and 3000 francs, and those who have charge of infirmaries for natives will have an additional allowance of 600 francs. The Government of Algeria has made an urgent appeal to all female practitioners who may be disposed to second its views by undertaking this work.

Experiments on the Food of Tuberculous Dogs.

M. C. Richet, M. Lassablière, and M. Lesné communicated a paper on this subject at a meeting of the Biological Society held on June 3rd. M. Richet proved long ago that raw meat gave excellent results as a food for dogs in which tuberculosis had been artificially produced but that cooked meat without any addition was the worst of all kinds of food. Of dogs inoculated intravenously with human tuberculosis all those which were fed on cooked meat died, while those which were fed on raw meat, milk, and *bouillies* survived. All the dogs fed on cooked meat lost their appetite and became thin but with raw meat the case was reversed.

June 19th.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Death of Professor Mikulicz.

Dr. von Mikulicz-Radecki, ordinary professor of surgery and chief surgeon to the University Clinic of Breslau, died in that city on June 14th. An Austrian by birth the deceased received his medical education at the University of Vienna, where he qualified in 1875, and afterwards became an assistant to the celebrated surgeon, Professor Billroth. His first work related to the details of antiseptic methods in surgery, which were modified and simplified by him, and studies on antiseptic and aseptic methods were conducted by him during nearly all his surgical career. He showed that the use of the antiseptic spray during the progress of an operation was unnecessary, he replaced carbolic acid by iodoform, and finally he devised methods of sterilising dressing materials and avoiding the infection of wounds by the hands and the respirations of the surgeon. As an assistant of Professor Billroth Professor Mikulicz, following his master, enlarged the field of abdominal surgery, which was then in an early stage, by a number of new operations. He was also much interested in operations on the joints. He was co-editor of the *Beiträge zur Chirurgie* and *Mittheilungen aus den Grenzgebieten der Chirurgie und Medicin;* and, together with Professor von Bergmann and Professor von Bruns, he edited the "Handbuch der Praktischen Chirurgie." After his assistantship in Vienna he became ordinary professor of surgery at the University of Cracow, where he lived from 1882 to 1887, but afterwards left his native country for Germany and became ordinary professor of surgery at the Universities, first of Königsberg and then of Breslau. Professor Mikulicz, who was only 55 years of age, was generally esteemed by both his patients and his professional brethren, who elected him President of the Breslau Medical Society and a member of the committee of the German Surgical Association.

University of Berlin.

At present there are 6279 students matriculated at the University of Berlin as compared with 6096 last summer and 7774 last winter. In the winter semester there is always in Berlin a far greater number of students than in summer, for, according to German custom, students often change their university and in winter prefer the large towns, whilst smaller ones, especially when situated in a fine country, are more popular in summer. The number of students attending the various faculties are as follows: theology, 248; medicine, 924; philosophy, 3255; and law, 1852. Of the students 4538 are Prussians, whilst 765 come from the other German States. The number of foreigners from Europe is 823, of whom 394 are Russians, 179 are Austrians and Hungarians, 43 are Swiss, and 24 are British; 93 come from America, 42 from Asia, five from Australia, and three from Africa. In addition to the matriculated students 4982 persons are authorised to attend the lectures of the university, this number including the students of the technical, veterinary, and other academies and 365 female students who, according to the by-laws, cannot be duly matriculated.

Sanatoriums for Tuberculous Patients.

The German committee for sanatoriums for tuberculous patients held its annual meeting in Berlin on June 8th, the Secretary of State, Count Posadowsky, being in the chair. The secretary, Dr. Nietner, reported that during last year seven new sanatoriums were opened, whilst seven others are now in construction. The number of beds available for tuberculous patients was 9113. The secretary stated that this number was sufficient so far as persons insured under the workmen's insurance laws were concerned, but that for other classes of the population additional accommodation was needed. The committee will henceforth give attention to the provision of asylums for incurable patients, of dispensaries, and of *Walderholungsstätten*—establishments where patients spend the whole day in the healthful air of forests. These *Walderholungsstätten* have recently been kept open not only in summer but also in winter. Dr. Nietner finally made reference to compulsory notification of tuberculosis and compulsory disinfection by the public authorities. Dr. Mannkopf (Remscheid) described the development of the "dispensaires antituberculeuses" in Germany. Of these there were at the present time 42 in existence, the majority being managed by the workmen's insurance institutions (*Landes-Versicherungs-Anstalten*) and by various municipal authorities. He recommended that the dispensaries should become municipal institutions and that they should be established not only in connexion with the cities but also in the country districts. Dr. Weber of the Imperial Health Office then gave an account of the progress that has been made with the researches carried out on behalf of the office on the relationship existing between human and bovine tuberculosis. He said that the "bacillus tuberculosis humanus" and the "bacillus tuberculosis bovinus" were two different species but that the bacillus bovinus might occasionally be present in the human subject also, though only in children under ten years of age. It had been ascertained that the bacillus bovinus might produce general miliary tuberculosis and that it was present in the lymphatic glands of children. As regards the measures to be taken against the spread of tuberculosis he said that the destruction of the bacillus tuberculosis humanus ought to be aimed at principally but that the bacillus bovinus was also injurious to the human species and therefore must not be neglected. The proceedings concluded with an address delivered by Dr. Kayserling on the subject of tuberculosis.

June 19th.

SWITZERLAND.

(FROM OUR OWN CORRESPONDENT.)

The Care of Imbeciles.

THE fifth annual Swiss conference on the care of imbeciles took place at St. Gall on June 5th and 6th, when the President of the association, M. Auer of Schwanden, presented a report on the work which is at present being done. There are now in Switzerland 26 institutions for the care of imbeciles accommodating 1011 children. In 24 towns and large villages there are attached to the State schools special classes in which children of weak intellect receive tuition. In 1897 only 567 children attended these classes, but the number now amounts to 1236. The State makes grants of money to insure that efficient teachers may be placed in charge of these classes and may also themselves receive competent medical and other instruction. Professor Furcher, national councillor, spoke on the legal aspect of the care of the weak-minded and the special provisions made under the new Federal law. Schulrat Dr. Sikknegir of Mannheim described his proposals which are being practically carried out in Mannheim in the State schools. He pleads for a further division in the form of intermediate classes, in which children of exceptionally feeble mental capacity should be placed and should receive special instruction in smaller classes under the best teachers. This system, which is most rational, will be introduced next year in the Zürich town schools.

Zürich Sanatorium for Tuberculosis.

Dr. Staub, medical director of the Zürich Sanatorium for Tuberculosis at Wald, has presented his report on the work of the year 1904. Of 260 patients who made an average stay of 129 days at the sanatorium 41 per cent. were in the first stage, 24 per cent. in the second stage, and 35 per cent. in the third stage of pulmonary tuberculosis; 80 per cent. left the establishment in an improved state of health, 62·7 per cent. being fit for active

work again. For the purpose of tracing the after-histories Dr. Staub continues to keep in correspondence with about 600 patients who have been at the sanatorium Of the patients who were under treatment two years ago, 62 per cent. were still fit for work; of those who were under treatment three, four, and five years ago the corresponding numbers fell to 52, 48, and 43 per cent. respectively. It was instructive to note the relation of those cases to the different stages of consumption. Of the patients in the first stage, from 79 to 90 per cent. were still at work from three to six years after admission, while of those in the second stage from 38 to 62 per cent. and of those in the third stage only from 6 to 24 per cent. were able to work. From this it appeared that even some almost hopeless cases could be rescued. As there were often 50 cases waiting for admission Dr. Staub was proposing to discharge slight cases which were making satisfactory progress after two months' treatment. The good results of the Bernese Sanatorium in Heiligenschwende encouraged him to take this step in the interest of urgent cases waiting for admission.

Zürich, June 20th.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

Destruction of Mosquitoes in New Jersey.

OWING to the swamps which abound in parts of New Jersey mosquitoes are present in the summer in countless swarms and are responsible for the malaria which is so prevalent. During the past few years attempts have been made to diminish the number of these pests but owing to the efforts being limited in their scope but little success has attended them. Drainage on a wide scale is the only sure means of abolishing mosquitoes. The Board of Health of Elizabeth, New Jersey, has recently decided to drain the low-lying meadows between that town and Newark. A sum sufficient to do about two-thirds of the necessary work this season has been appropriated, while the Central Railroad of New Jersey will be requested to coöperate to the extent of placing culverts under road bed wherever the ditching plan will render that needful.

Insanity in New York State.

The New York State Charities Aid Association has submitted recently to the State Commission of Lunacy a report which shows that in New York State the total number of insane persons in State hospitals and licensed private asylums on Oct. 1st, 1904, was 26,861, an increase of 927 over the figures for the previous year. Of this whole number 25,019 were in the 14 State hospitals. An important feature of the report is the recommendation that improvement should be made in the methods of deporting insane aliens and that in the case of such persons there should be more coöperation between the State hospitals and the United States immigration authorities. The State Charities Aid Association asserts that it has found that insane aliens deported by the Government have not always reached their homes as promptly as they should have done and on more than one occasion they have not reached their homes at all. When the census was taken it was found that the insane population of Manhattan, containing 2,139,632 people, was 7427, while Long Island, with a population of 1,555,152, had 4168 insane.

Alcoholism and Insanity.

The May number of the *New York Post-Graduate Journal* is wholly devoted to articles from the clinic of Dr. Joseph Collins, professor of nervous diseases in the New York Post-Graduate School. The first article is on the Comparative Anatomy of the Anterior Cerebral Artery and is by Dr. William Leseur. This article is exhaustive and accurate and beautifully illustrated. Perhaps the most interesting article of the series is that by Dr. Collins on the Commoner Varieties of Alcoholic Insanity. He maintains that the intemperate use of alcohol is directly or indirectly the commonest cause of insanity. Indeed, he goes so far as to say that it is nearly the sole cause, and that if the drinking of alcohol were stamped out for a century insanity would undoubtedly shrink 75 per cent. Dr. Collins also points out that it is not so much the amount of alcohol that a person consumes as the idiosyncrasy of the consumer that stands in causal relationship to insanity.

Fear inspired by Cats.

Dr. Weir-Mitchell has written on the above subject in a recent number of *American Medicine*. He states that at least one-fourth of his cases of cat terror in grave forms is a family peculiarity. Five in a family of seven had it. In another case, a maternal grandfather, two great aunts, an uncle, and a sister were all thus troubled, and in other families where one had it, at least one other, brother or sister, was more or less affected. Sex appears to have no marked influence but the extreme symptoms are more frequent in women. Dr. Mitchell concludes that the cat emanations may affect the nervous system through the nasal membrane, although unrecognised as odours. A susceptible person who is told that a cat is near when none is in the room may experience the same unpleasant consequences as when the cat is present. It is perhaps worthy of note that many of the victims of cat fear declare that even strange cats seem to have an unusual desire to be near them, jump on their laps, and follow them.

Milk-supply in New York.

The Governor of New York State has signed a Bill requiring owners or operators of milk stations for the sale of milk or the shipping of milk to cities to procure licences from the State Commissioner of Agriculture. The applicant must file an affidavit declaring that he will not participate in or permit adulteration of milk at his station.

June 10th.

NOTES FROM INDIA.

(FROM OUR SPECIAL CORRESPONDENT.)

The Directorship of the Pasteur Institute, Kasauli.

Colonel D. Semple, who has just retired from the Royal Army Medical Corps, will remain as director of the Pasteur Institute, Kasauli. His salary has been fixed at Rs. 2000 per mensem. This is very satisfactory as the work of the institute has developed very largely under Colonel Semple's management and a great variety of experimental, as well as instructional, work is being conducted. Madras is provided for with the King Institute and Bombay with the Plague Research Laboratory but Bengal is at present neglected. In this last presidency very little encouragement seems to be given to original workers. There are no men regularly told off for research work and there is no properly equipped laboratory for experimental work. For such a large province and with such an enormous population and for a presidency which prides itself upon attracting the pick of the services this absence of encouragement to original work is hardly creditable.

5000 Deaths a Day from Plague: the Course of the Epidemic.

Over 5000 deaths a day are still recorded as the ravages of plague. There has been a decline in the mortality during the last few weeks and a further decline may be expected. The Punjab returned 25,340 deaths for the week ending May 20th, as compared with 29,385 deaths for the previous seven days; United Provinces, 5132, as against 9220; Bengal, 1069, as against 1660; Rajputana, 2142, as against 3292; Bombay districts, 585, as against 838; Burmah, 58, as against 74; Kashmir, 200, as against 295; Bombay city, 594, as against 679; and Calcutta, 172, as against 324. The decline is general and belongs, therefore, to the life of the outbreak, whatever determines its course. The general recrudescence of plague throughout India, which seems now to occur regularly every spring, follows a very similar course to the annual outbreaks which show themselves in Calcutta and Bombay, and these in their turn are like the less extensive outbursts which occur in the smaller towns, the only difference being that the larger the area or the population affected the less rapid are the rise and fall and the longer is the duration of the outbreak.

June 2nd.

AUSTRALIA.

(FROM OUR OWN CORRESPONDENT.)

Infantile Mortality.

SOME time ago the Government statist for Victoria took exception to a statement by your correspondent as to the excessive infantile mortality in Australia and said that compared with other countries it was not excessive. While it may not be relatively excessive it is sufficiently high to call

for inquiry and improvement and the Sydney press has recently taken the matter up. In a leading article in the *Sydney Morning Herald* it was pointed out that between the years 1896–1900, roughly, one out of nine infants under one year of age died. In the period 1881–85 about one in eight died; the total mortality of infants under one year for 23 years was over 80,000 in New South Wales, while the other States show much the same record. The article considered that the figures indicated "a quite unnecessary waste" of child life. The Sydney Women's Progressive Association requested the Premier to give assistance for the establishment of a hospital for infants under two years of age and pressed on his attention the statement that over 4000 babies under one year die annually.—At the thirteenth annual meeting of the friends and supporters of the Infants' Home, Ashfield, Sydney, the report showed that the infantile mortality at the home was only 9 per cent., and Dr. C. K. Mackellar, who presided, and Sir James Graham stated that it was clear that a large amount of really good work had been done in the institution.

Friendly Societies in New South Wales.

The annual session of delegates from the various branches of the Australian Natives Association was held recently in Sydney. The President said that the association had had uphill work to keep its affairs straight during the past 12 months. Alluding to the trouble with the New South Wales branch of the British Medical Association, he regretted that the council of that body had not yet seen fit to recognise the association. He had recently asked the council not to come to a definite conclusion before again conferring with the board of the Natives Association, but was amazed to receive a letter stating that the council would not discuss the matter further. He denied that the association was political except in an educative sense. It did not enter into party politics. In the subsequent discussion it was stated that "it was no use blinking the fact that the A.N.A. could not get on without the concurrence and support of the doctors." Some surprising allegations were also made "that the Sydney Hospital refused to admit an unfortunate woman simply because she had been attended by an A.N.A. doctor," that "a woman who had been attended by a medical officer of the association was turned out of the hospital before she was well," and "when they heard of medical men who were paid by the Government refusing to consult with a brother doctor, even where it was a case of life or death, it was time for a Parliamentary inquiry." The session, however, took no fresh action in the matter.—The twenty-fifth annual session of the Independent Order of Oddfellows was also held recently. The report congratulated the brethren on the progress of the Order. There were seven grand lodges, 350 subordinate lodges, and an aggregate membership of about 35,000 under the jurisdiction of the Grand Lodge of Australasia. The membership in New South Wales was 9409. The total net funds of the Order in New South Wales were £72,449.

The Water-supply of Sydney.

The medical officer to the Sydney water and sewerage board, Dr. E. S. Stokes, has submitted a report on the workmen's camp at the cataract dam for the Sydney water-supply, recommending the removal of the camp and that the board should be vested with full control of the camp both in sanitary and disciplinary matters. The engineer-in-chief concurred in the views of the medical officer. A minute by the president of the board set out that the camp had been improperly and injudiciously pitched on a site which presented a danger to the purity of the water-supply, and the board resolved

That in the opinion of this board it is desirable to have the workmen's camps at the cataract dam and works removed to a site outside the catchment area.

The Teeth of School Children.

The Dental Association of New South Wales has decided to intrust the arrangements for inspecting the teeth of all the school children in New South Wales to a committee of seven. It is proposed to visit each school once. A lecture on teeth and their care will be given and the children who have defective teeth will be made aware of the fact and be tendered advice. The work of inspection is to be carried out gratuitously, the various members of the association volunteering their services.

May 15th.

Obituary.

FREDERICK JAMES GANT, F.R.C.S. ENG.

Mr. Frederick James Gant, whose death took place on June 6th at his residence, 16, Connaught-square, London, W., had for many years occupied a prominent position among London surgeons and was, moreover, well known as an industrious author, not only of strictly professional treatises but also of works on miscellaneous questions—theological, social, and ethical, some of the latter being of a pronounced controversial nature. Mr. Gant was born in Acton-place, Kingsland-road, London, N.E., in December, 1825. In the "Autobiography" which he published in 1905 he describes himself as "born two months before I was due" and makes frequent reference to the weakness of his constitution in early life. His childhood was passed at Eastbourne, on the south coast, to the great advantage of his health. Losing both his parents while a young man, he became assistant to a pharmaceutical chemist in Shoreditch and afterwards entered as a student of medicine at University College, London. In 1849 he took the diploma of M.R.C.S. Eng. and was admitted a Fellow of the College in 1861. In 1852 he commenced practice as a consulting surgeon at 13, Old Cavendish-street, W., and lectured on physiology at the short-lived Hunterian School of Medicine in Bedford-square, W.C. In 1853, on the discontinuance of the Hunterian School, he migrated to the Royal Free Hospital in Gray's Inn-road, where he did a great deal towards the improvement of the pathological museum and lectured on anatomy and physiology. During the Crimean war—namely, from March, 1855, to the conclusion of peace in the spring of 1856—Mr. Gant held the office of civil surgeon in the military hospitals in the Crimea and at Scutari, rendering services for which he eventually received a medal with a clasp for Sebastopol. The subject of his first book, which was published in 1858 was suggested by a casual visit to the Smithfield Club Cattle Show held in London in December, 1857. It was entitled "The Evil Results of Overfeeding Cattle—a New Inquiry," and showed that fatty degeneration of the heart and other muscles was frequent among the prize animals. He had already published in THE LANCET in 1857 a series of ten papers with the title "What has Pathological Anatomy done for Medicine and Surgery?" and these appeared in book form in 1864 as "Principles of Surgery—Clinical, Medical, and Operative." His "Science and Practice of Surgery," published in 1871, was one of the earliest text-books, if not the earliest, to contain an account of the antiseptic methods in surgery which had been originated by Lord Lister in the Glasgow Royal Infirmary about five years previously. He also wrote "Diseases of the Bladder, Prostate Gland, and Urethra," which reached a fifth edition in 1884; "The Student's Surgery," which appeared in 1890; and a "Guide to the Examinations by the Conjoint Board in England and for Diploma F.R.C.S. England," the seventh edition of which, revised by Mr. Willmott H. Evans, was published in 1899. The Lettsomian lectures on the Excisional Surgery of the Joints for Disease delivered by him before the Medical Society of London were published in THE LANCET of May 13th and June 3rd, 1871. In consequence of his position at the Royal Free Hospital Mr. Gant, although not at first in favour of the movement for the medical education of women, became a teacher of the students belonging to the London School of Medicine for Women who were admitted to the practice of that hospital in 1878. In the end of 1890, when he resigned the position which he then held as senior surgeon of the hospital, the addresses presented to him included a very sympathetic and cordial one from the lady students in attendance at the time. In 1899 Mr. Gant received a serious shock in consequence of the death of his wife whom he had married in 1859 and to whom he was devotedly attached. From this time his health gradually failed and his friends were probably not surprised to read the news of his death.

WILLIAM OGLE, M.A., M.D. CANTAB., F.R.C.P. LOND., J.P.

Dr. William Ogle of Derby, who died there on May 16th after a protracted illness, was one of the most respected members of his profession and had been happy in the enjoyment of a long life devoted to good works. He was born in

January, 1824, at Skirbeck Vicarage, near Boston, in Lincolnshire, his father being vicar of the parish. He was educated at Rugby School under Dr. Arnold and subsequently matriculated at St. Catharine's College, Cambridge, of which college he was afterwards elected a Fellow, having become a Master in Arts in 1851. On leaving Cambridge he studied medicine, first at the University of Edinburgh and afterwards at the Rotunda Hospital in Dublin. After becoming qualified he came to London and was for five years physician to the Royal Pimlico Provident Dispensary, being also attached to St George's Hospital. In 1858 he took the degree of M.D. at the University of Cambridge and in 1868 was elected a Fellow of the Royal College of Physicians of London. In 1860 he removed to Derby as acting physician to the Derbyshire Infirmary, which post he held until his resignation in 1891, when he was appointed honorary consulting physician to the same institution. In 1894 he was placed on the commission of the peace for the borough. Besides many occasional contributions to medical journals he published a series of papers on "Preventive Medicine." In Derby, in addition to his professional and hospital duties, to the latter of which he devoted much time and trouble, he organised and carefully watched over the well-known Nursing and Sanitary Institution of that town, of which he was indeed the founder. He was an ardent supporter of the Young Men's Christian Association, interesting himself not only in the Derby branch but in other branches elsewhere, and he never lost an opportunity of pressing upon young men the reality of the spiritual life. He was a deeply religious man and was greatly beloved by the many friends who understood his strong, yet simple, character. In 1860, before going to Derby, he married Miss Margaret Lambert of Bradford, who survives him. His two sons are the Rev. Hugh Lambert Ogle, vicar of Plumstead, Kent, and the Rev. Philip Douglas Ogle of Nottingham. The funeral took place at the old cemetery, Derby, on May 19th.

JOHN MATTHEWS, M.D. EDIN., L.R.C.S. EDIN., L.S.A.

By the death on June 4th of Dr. John Matthews Tyneside has lost one of the oldest members of the profession, for he was in his eighty-fourth year. Although one of the oldest residents of Tynemouth he was a native of Gloucester and went to Tynemouth 47 years ago. He took his M.D. degree at Edinburgh in 1853. He was a man very well known and respected On the foundation of the Tynemouth Volunteer Life Brigade he was made honorary surgeon and he was also medical officer to the Tynemouth pier works. Dr. Matthews was thrice married and leaves a widow. In 1877 he retired from practice and being a keen sportsman he spent much of his time in fishing and shooting, as well as being occupied with his hobbies of wood- and ivory-turning. He was a benevolent gentleman and will be missed by many of the poor of Tynemouth.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At examinations for medical and surgical degrees, Easter term, the following candidates were successful:—

FIRST EXAMINATION.

Part I. Chemistry and Physics.—G. W. M. Andrew and H. J. Baldwin, B.A., Emmanuel; H. W. Barber, Clare; A. M. Bodkin, King's; N. L. Clarke, Christ's; R. F. P. Cory, H. J. Couchman, and R. Ellis, Catharine; E. St. G. S. Goodwin, Caius; R. E. Grice-Hutchinson and H. K. Griffith, Trinity; S. J. Higgins, Caius; A. L. Hobhouse, Trinity; G. N. Humphreys, Catharine; R. H. Hutchinson, B.A., Clare; H. G. G. Jeffreys, Trinity; A. C. Jepson, Pembroke; R. F. Jones, K. T. Khong, and G. C. Lim, St. John's; M. Maclaren, Trinity; O de B. Marsh, Pembroke; G. Moore, Clare; P. A. Opie, Caius; C. H. G. Philp, St. John's; F. A. Powell, Trinity; J. B. Pulling, Christ's; A. E. Rayner, Caius; F. E. W. Rogers, Emmanuel; J. B. Ronaldson and F. G. Rose, St. John's; W. J. D. Smyth, Pembroke; G. N. Stathers and C. J. Stocker, Trinity; F. J. Thorne, Jesus; F. H. Watson, Caius; and N. S. Williams, Clare.

Part II. Elementary Biology.—G. W. M. Andrew, Emmanuel; H. W. Barber, Clare; H. G. Baynes, Trinity; A. H. Birks, Caius; A. M. Bodkin, King's; H. H. Brown, Caius; W. T. Channing-Pearce, Emmanuel; D. G. Cherrington, Trinity; N. L. Clarke, Christ's; R. F. P. Cory and H. J. Couchman, Caius; E. V de Souza and J. Ellison, Downing; A. B. Evans, St. John's; A. W. Gaye, Caius; A. C. Gemmell, B.A., Trinity; R. W. B. Gibson, Jesus; E. StG. S. Goodwin, Caius; S. W. Green, Clare; H. K. Griffith, Trinity; L. S. M. Habich, St. John's; A. L. Hobhouse, Trinity; A. C. Jepson, Pembroke; R. F. Jones and K. T. Khong, St. John's; G. C. Kidd, Christ's; G. C. Lim, St. John's; N. F. Lock, Caius; H. W. Malden, non-collegiate; C. H. Maxwell, Christ's; G. Moore, Clare; C. G. H. Morse, Emmanuel; F. C Newman, Downing; P. A Opie, Caius; C. H G. Philp, St John's; B. A. Playne, Pembroke; T. E. G. Poynder, Clare; J. B. Pulling, Christ's; A. H. Richardson, St John's; F. G. Rose, St John's; F. D. Saner, Christ's; F. P. Saunders, Clare; W Shipton, Emmanuel; C. J. Stocker and A. W. Stott, Trinity; A. D Taylor, St. John's; F. J Thorne, Jesus; W W. C. Topley, St. John's; F. Tweedale, Downing; J. van Schalkwijk, Caius; R. H. Vercoe, St. John's; L. C. Walker, Christ's; J. M. Wallace, Downing; P. B. Wallis, Pembroke; F. H. Watson, Caius; H. M. Whiting, Downing; N. S. Williams, Clare; and H. F. Wilson, Christ's.

SECOND EXAMINATION.

Human Anatomy and Physiology.—A. C. Anderson, Downing; R. R. Armstrong and A. Barker, B.A., Trinity; C. T. V. Benson, B.A., King's; V. J. Carr, B.A., Trinity; A. E. A. Carver, R. M. Collinge, B.A., and R. Cox, Caius; A. H. Crook, Christ's; A. E. Cullen, St. John's; F. C. Davies, Downing; H. Dearden, B.A., Caius; S. Dixon, M.A., Trinity; G. H. Dunn, B.A., Pembroke; A. J. S. Fuller, B.A., and T. S. Gibson, B.A., Emmanuel; B. Haigh, B.A., Caius; A. Hamilton, Christ's; G. Hoffman, B.A., and B. E. Ingleby, B.A., Caius; R. Knowles, Downing; F. H. Lester, B.A., Pembroke; C. Mackenzie, B.A., Emmanuel; H. McLean, B.A., Caius; W. Mathieson, Sidney Sussex; L. Meakin, B.A., Trinity; E. E. Paget-Tomlinson, B.A., Trinity Hall; B. H. Palmer, B.A., Pembroke; L. B. Perry, Queen's; F. S. Poole, B.A., Sidney Sussex; A. V. Poyser, B.A., Magdalen; K. D. Pringle, B.A., Caius; R. P. M. Roberts, Queen's; J. H. Ryffel, M.A., Peterhouse; S. E. T. Shann, B.A., L. W. Sharp, B.A., and O. R. Smale, B.A., Caius; E. R. Stone, B.A., Emmanuel; R. Svensson, B.A., C. H. S. Taylor, and G. W. Twigg, B.A., Caius; G. B. Wainwright, B.A., G. Walker, B.A., R. W. S. Walker, B.A., and H. K. Waller, Trinity; and J. N. Wheeler, B.A., Christ's.

THIRD EXAMINATION.

Part I. Pharmacology and General Pathology.—A. G. Atkinson, Trinity; G. B. Bartlett, B.A., Sidney Sussex; H. Beckton, M.A., Clare; H. J. D. Birkett, B.A., Trinity; W. T. Briscoe, B.A., H. Selwyn; R. Burgess, B.A., Caius; H. Chapple, B.A., St. John's; R. G. Chase and G. G. Collet, B.A., Trinity; S. H. Daukes, B.A., Caius; L. T. Dean, B.A., Sidney Sussex; G. H. Drew, B.A., Christ's; G. W. Dryland, B.A., T. W. N. Dunn, B.A., and T. G. Elger, B.A., Caius; A. W. Ewing, B.A., Christ's; R. L. Gamlen, B.A., and J. F. Gaskell, M.A., Caius; H. J. Gauvain, B.A., St. John's; H. E. Graham, B.A., Jesus; M. Grundy, B.A., and H. Hardwick-Smith, B.A., St. John's; R. N. Hart, B.A., Sidney Sussex; N. G. Horner, B.A., Caius; A. E. Kerr, B.A., Christ's; E. Lloyd, B.A., and J. H. B. Martin, B.A., Emmanuel; L. Nicholls, B.A., Downing; G. W. de P. Nicholson, M.A., Jesus; H. F. G. Noyes, B.A., Caius; A. S. M. Palmer, B.A., Jesus; P. R. Parkinson, B.A., and M. Phillips, B.A., Caius; E. Slack, M.A., Pembroke; A. C. R. Suhr, B.A., Caius; B. S. Taylor, M.A., and C. H. Treadgold, B.A., Clare; A. Walker, B.A., and A. C. Warren, Emmanuel; H. N. Webber, B.A., St. John's; C. J. Wilson, B.A., Christ's; and J. F. Windsor, B.A., H. Selwyn.

Mr. G. F. C. Searle, Peterhouse, has been appointed a University lecturer in physics; Dr. L. E. Shore, St. John's, in physiology; and Dr. A. C. Haddon, Christ's, in ethnology.—At the congregation on June 15th the following medical and surgical degrees were conferred:—

M.D.—E. W. Hedley, King's; W. S. Fox, W. Malden, and J. D. C. White, Trinity; and T. E. Holmes, Caius.
M.B.—J. M. Hamill and J. C. Newman, Trinity; W. E. Paramore, St. John's; and H. L. Wilson, H. Selwyn.
B.C.—W. S. Fox, J. M. Hamill, and J. C. Newman, Trinity; C. R. Crowther and W. E. Paramore, St. John's; and T. J. Foulder, Clare.

At the congregation on June 17th the following degrees were conferred:—

M.D.—W. B. Knobel, Trinity; J. Barnicot, Pembroke; and G. S. Graham-Smith, Pembroke.
M.B.—J. Goss, Jesus.
B.C.—C. E. Droop, Trinity.

The Raymond Horton Smith Prize for the best M.D. Thesis of the year is awarded to W. L. H. Duckworth, M.A., M.D., Fellow of Jesus College and Senior Proctor. The Thesis of S. P. Pollard, Caius, is highly commended.

TRINITY COLLEGE, DUBLIN.—At the final examination in medicine held in Trinity term the following candidates were successful:—

Lily A. Baker, George MacG. Millar, Hercules J. Knox, John A. Pringle, Joseph W. Houston, Montgomery D. Ferguson, Thomas King-Edwards, Alfred G. Alexander, Richard B. Bryan (clerk), Madeleine S. Baker, William Nunan, Henry H. A. Emerson, John A. Sibthorpe, and Cecil A. Boyd.

UNIVERSITY OF BRUSSELS.—At the examination for the M.D. degree held in June the following gentlemen passed:—

M. P. Kerrawalla (honours), Bombay; James B. Patterson, Carluke, Scotland; W. R. Coldicote and A. Acland, London; E. G. Andrew, Cornwall; and W. Phillips, Canterbury.

UNIVERSITY OF OXFORD.—The degree of D.M. has been conferred upon William Osler, Hon. D.Sc., Regius Professor of Medicine, by a Decree of Convocation.—The degree of D.Sc. *honoris causâ* has been conferred upon Edwin

Ray Lankester, M.A., F.R.S., Honorary Fellow of Exeter College, Director of the Natural History Departments of the British Museum.—The following appointments of examiners have been confirmed:—In human anatomy: Robert Howden, B.M. Edin., M.A. Durh. In pathology: James Ritchie, M.A., B.Sc., Fellow of New College. In surgery: D'Arcy Power, B.M., Exeter College.

THE annual Bolingbroke lecture in connexion with the South-West London Medical Society was delivered on June 14th by Sir R. Douglas Powell, Bart., who took for his subject Some Clinical Lessons from the History of Medicine in the Last Half Century.

THE QUEEN'S JUBILEE HOSPITAL.—A ball was given at the Wharnecliffe Rooms, Hotel Great Central, on June 20th, in aid of the Queen's Jubilee Hospital, Earl's-court, which is greatly in need of funds. Nearly 500 people were present and dancing took place in rooms beautifully decorated with palms and flowers. By kind permission the band of the Scots Guards was in attendance.

NATIONAL FIRE BRIGADES UNION: ANNUAL COMPETITIONS.—The entries for the National Fire Brigades Union Competitions which will open at the Crystal Palace next Monday, June 26th, and which will be continued daily throughout the week, greatly exceed those of last year. The men, nearly 2000 in all, will be housed in tents pitched in the Cedars Grove and will be in charge of Lieutenant-Colonel Dixon and chief officers G. W. Johnson and J. Clulee. On Thursday there will be a special display and an inspection by the Duke of Marlborough. About 600 brigades and 12,000 men are attached to the union which protects a population of over 9,000,000.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.—The festival dinner of the National Hospital for the Relief and Cure of the Paralysed and Epileptic was held at the Whitehall Rooms of the Hôtel Métropole, London, on June 15th, when Lord Strathcona and Mount Royal occupied the chair. Amongst those present were Sir Felix Semon and Lady Semon, Mr. J. Danvers Power, Dr. T. Buzzard, Dr. J. S. Risien Russell, Dr. F. E. Batten, Dr. E. F. Buzzard, Dr. H. H. Tooth, Dr. W. W. H. Tate, Mr. A. E. Cumberbatch, Dr. C. E. Beevor, Mr. R. M. Gunn, Dr. J. A. Ormerod, Mr. C. A. Ballance, Dr. W. A. Turner, Dr. J. Taylor, Dr. D. Ferrier, and Mr. F. Macmillan (chairman of the board of management). The loyal toasts having been drunk with the greatest enthusiasm the chairman rose and submitted "Success to the National Hospital for the Relief and Cure of the Paralysed and Epileptic." In tracing the history of the hospital from 1859, when it was founded, the chairman explained that the institution was called the "Albany Memorial" at the express desire of Queen Victoria and it was mainly owing to the efforts of the late Duke of Albany that the hospital was re-constructed in 1885. Besides having a country convalescent branch the hospital provided pensions up to about £20 a year for 90 incurable patients. The name and the fame of the hospital had gone abroad throughout the civilised world and patients were sent to it for relief from all parts of the empire and from many foreign countries. The number of in-patients was 1113 and the out-patients numbered 6574. The expenditure was £5041 in excess of the income and money was required to extend the hospital, so that funds were urgently needed. The chairman also mentioned that the institution was greatly indebted to its eminent medical staff who devoted so much time to the good work without fee or hope of reward. Mr. F. Macmillan, in responding to the toast, also paid a high compliment to the medical staff. Mr. Danvers Power then proposed the toast of "The Medical and Surgical Staff." He made a few remarks concerning the differences which existed some time ago between the board of management and the medical staff but had nothing but praise and commendation of the highest order for the way in which the board of management was helped by the medical staff at the present time. Mr. Danvers Power concluded by regretting the absence of Sir John Paget who was to have proposed the toast. Dr. J. A. Ormerod, in replying to the toast, congratulated all concerned on the efficient manner in which the institution was conducted. Mr. A. Royle (one of the board of management) here interposed a toast which was not on the toast list; it was that of "The Ladies" and he called upon Sir Felix Semon to answer on their behalf. That gentleman rose at once and in a brief but witty speech fully discharged the duty which had been thus suddenly intrusted to him. He made use of the opportunity to express the thanks of the staff to all those ladies who had come forward at a time of difficulty and stress to help the hospital and those connected with it. The secretary, Mr. G. H. Hamilton, then announced that the subscription list amounted to over £3000 and he was followed by the Dean of Canterbury who, in felicitous terms, proposed "The Health of the Chairman." He remarked that Professor Ray Lankester had lately lectured on the passage in Genesis in which men were told to replenish the earth and subdue it and have dominion, but he (the Dean) would like to add that it appeared to him that the medical profession sought to subdue nature for the benefit of man. The chairman having suitably responded the proceedings came to an end.

ST. LUKE'S HOUSE, A HOME FOR THE DYING POOR (14, Pembridge-square, Bayswater, London, W.).—The twelfth annual report of this institution, of which Her Majesty Queen Alexandra is the patroness, shows a record of good work for the year 1904. During the year under notice 237 applications for admission were received and from among them 96 patients were selected, 49 being men and 47 women. As there were already 24 patients in the home on Jan. 1st, 1904, the total number of cases dealt with was 120. Tuberculosis and cancer are the principal classes of disease from which the patients suffer. The home is greatly in need of financial help which ought to be forthcoming immediately, for as the report of the medical superintendent points out "it is an excellent thing that we are able to remove from among crowded families all these cases of consumption who, by carelessness as to the disposal and disinfection of expectoration, would become sources of disease to others; all these cases of cancer, also, many of which, unless most skilfully and carefully nursed and tended, become scarcely bearable and very insanitary to those dwelling with them." The healthy of all classes are thus benefited by the compassion shown to the sick, and all classes who are able to do so should support the institution.

Parliamentary Intelligence.

HOUSE OF COMMONS.

TUESDAY, JUNE 20TH.

The Medical Register.

Mr. WEIR asked the Secretary of State for the Home Department whether, having regard to the fact that during recent years 20 names had been struck off the Medical Register by the General Medical Council for infamous conduct in a professional respect and 12 restored, whilst out of six names removed from the Dentists Register for a similar cause one had been restored, he would state if any of those whose names had been restored were originally charged with adultery, and how many.—Mr. AKERS-DOUGLAS replied: The answer is none.—Mr. WEIR: May I ask whether the right honourable gentleman obtained his information from the General Medical Council, for I have some cases I shall be prepared to lay before him.—Mr. AKERS-DOUGLAS: I shall be very glad if the honourable gentleman will give me any information he may have, but I have given him all that I possess.

Human Deaths from Glanders.

Mr. CHANNING asked the President of the Local Government Board whether he was aware that inquests recently held on a stableman in the Star Omnibus Company's stables and on Elizabeth Cousins, the wife of a carman, in Pimlico, and a large number of fatal cases in London hospitals in the past two years had shown the increasing risk of glanders being communicated to human beings; and whether he would, in consultation with the Board of Agriculture, take steps by legislation or by administrative orders to deal with this danger.—Mr. GERALD BALFOUR answered: I have seen reports of the inquests referred to, but I am not aware that there has been any large number of fatal cases of glanders in London hospitals in the last two years. The number of human deaths in London from this cause appears to have been four in 1903 and two in 1904. I am advised that the risk of the disease being communicated from horses to man is not great and that it does not seem to be increasing. But I think it may be desirable that when an inspector of the local authority, under the Diseases of Animals Acts, receives notice of the occurrence of a case of glanders in a horse he should forthwith give information of the receipt of the notice to the medical officer of the district in which the horse is, or was, and I will communicate with my right honourable friend the President of the Board of Agriculture and Fisheries on the subject.

Plague Regulations in Ireland.

Mr. JOSEPH NOLAN asked the Chief Secretary for Ireland whether he was aware that the Local Government Board issued certain temporary regulations respecting plague to the Louth district council, Drogheda union, commencing Oct. 1st, 1900, and that Mr. W. J. O'Keeffe, who was employed to carry out these orders, furnished an account for £21 for performing the duties connected with the same; and whether, seeing that the Local Government Board declined to sanction the payment of this

amount, and that Mr. O'Keeffe took legal proceedings for recovery and obtained a decree with costs, the Local Government Board would now make an order apportioning the respective amounts to be paid under this decree by each of the sanitary authorities affected—viz., Ardee No. 1 Rural District Council, Louth (Drogheda union) Rural District Council, Meath (Drogheda union) Rural District Council, and Drogheda Urban District Council.—Mr. LONG said: The temporary regulations referred to were revoked on Nov. 12th, 1900. Mr. O'Keeffe claimed £21 for 21 inspections made between Feb. 14th, 1901, and Feb. 9th, 1903. 13 of these inspections were made prior to Nov. 1st, 1901, when no such regulations were in force, and when, therefore, he was not required to inspect vessels from home ports. The regulations were again issued on the last-mentioned date and were continued in force for a period of six months, during which time he made four inspections. These were the only inspections in respect of which the Board could legally sanction payment or apportion the cost on the other contributory districts in the Port of Drogheda. The remaining four inspections were made after the expiration of the six months, when there were no special regulations in force. The Louth rural district council failed to defend the process in respect of charges for which there was no legal warranty and it now seeks to have the amount of the decree, given through its default, apportioned on the other sanitary districts abutting on the Port of Drogheda, but in the circumstances there is no power to make such apportionment.

Suppression of a Dispensary District.

Mr. JOSEPH NOLAN asked the Chief Secretary for Ireland whether he had yet seen his way to ask the Local Government Board (Ireland) to modify its instruction, under sealed order, suppressing one of the dispensary districts in the Ardee union; whether his attention had been drawn to the fatal accidents which recently occurred at Collon, in which the victims died without relief owing to the removal of the medical officer from the village; and whether he was aware that a special messenger had to be sent by car for a medical man in each case, and to what account the extra expenditure was to be charged.—Mr. LONG said: The answer to the first inquiry is in the negative. The Board is only aware of one recent fatal accident at Collon and in that case, according to the statement of the coroner's jury, the dispensary medical officer attended promptly. Expenditure incurred on car hire in summoning medical officers cannot be defrayed out of the local rates unless it has been authorised by the relieving officer.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

ASH, R. V. C., M.B., B.S. Edin., has been appointed Lecturer on Anatomy, Physiology, and Hygiene at the Trust College of Hygiene and Medical Inspector of Schools, Dunfermline.

COOK, F. E., M.R.C.S., L.R.C.P. Lond., has been appointed Medical Officer to attend to the Destitute Poor and Aborigines within the District of Millicent.

CRAWFORD, A. R., M.B., Ch.B. N.Z., has been appointed Junior House Surgeon to the Dunedin Hospital, New Zealand.

DYER, C. HAROLD M.D. Aberd., has been re-appointed Medical Officer of Health to the Cleckheaton Urban District Council.

FOX, IDA E., M.B., B.S. Durh., has been appointed Resident Medical Officer, Sherwood Forest Sanatorium, Mansfield, Notts.

GOW, WILLIAM BAXTER, M.D., M.S. Edin., has been appointed Medical Superintendent of the Lunatic Asylum at Christchurch, New Zealand.

MACGILVRAY, W. JACKSON HOOKER, L.R.C.P., L.R.C.S. Edin., &c., has been appointed Medical Referee, Royal Liver Friendly Society, for Higher Broughton, Manchester, and District.

MACMILLAN, A. R., M.B., Ch.M. Edin., has been appointed Medical Officer to attend to the Destitute Poor and Aborigines within the District of Naracoorte.

MCMILLAN, J., M.B., B.S. Glasg., has been appointed Certifying Surgeon under the Factory and Workshop Act for the Shotts District of the county of Lanark.

WETHERED, F. J., M.D. Lond., F.R.C.P., has been appointed Physician to the Hospital for Consumption and Diseases of the Chest, Brompton.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

ABERDEEN ROYAL INFIRMARY.—Assistant Medical Electrician.

ABERGAVENNY, MONMOUTHSHIRE ASYLUM.—Senior Assistant Medical Officer. Salary £250 per annum, with board, apartments, attendance, and washing.

ARMY MEDICAL SERVICE.—40 Commissions in the Royal Army Medical Corps.

BATH, ROYAL MINERAL WATER HOSPITAL.—Resident Medical Officer. Salary £100, with lodging, board and laundry.

BRADFORD POOR-LAW HOSPITAL AND WORKHOUSE.—Resident Assistant Medical Officer, unmarried. Salary £100, with rations, apartments, and washing.

CHESTER, CITY AND COUNTY BOROUGH.—Medical Officer of Health. Salary £500 per annum.

CITY OF LONDON AND EAST LONDON DISPENSARY, 35, Wilson-street, Finsbury, E.C.—Medical Officer.

CLIFTON, YORKS, NORTH RIDING OF YORKSHIRE LUNATIC ASYLUM.—Medical Superintendent. Salary £600 per annum, with house and allowances.

EAST HAM BOROUGH COUNCIL.—Medical Officer of Health for the Borough and Medical Superintendent of the Isolation Hospitals, Convalescent Home, and Schools. Combined salary £400 per annum, rising to £500.

EAST LONDON HOSPITAL FOR CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.—House Physician. Honorarium of £25 for six months, with board and residence.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—Assistant House Surgeon, unmarried. Salary £60 per annum, with board, lodging, and washing.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—Resident House Physicians for six months. Honorarium of £25. Also Assistant Physician.

HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.—House Surgeon, unmarried, for six months. Salary £20, with board and residence.

LEEDS GENERAL INFIRMARY.—Laboratory Curator. Salary £150 per annum.

LONDON LOCK HOSPITAL.—House Surgeon. Salary £80 per annum, with board, lodging, and washing.

MARGATE, ROYAL SEA BATHING HOSPITAL.—Honorary Medical Officer in charge of Electrical Department.

NATIONAL DENTAL HOSPITAL.—Anæsthetist.

NORTH-EASTERN HOSPITAL FOR CHILDREN, Hackney-road, Bethnal Green, E.—Physician-in-Charge of Skin Department. Also Assistant Physician. Also Assistant Surgeon.

NORTH-WEST LONDON HOSPITAL, Kentish Town-road. — Dental Surgeon.

OXFORD, RADCLIFFE INFIRMARY.—Physician (honorary).

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Assistant Resident Medical Officer for four months. Salary at rate of £50 per annum, with board, residence, and washing.

QUEEN'S JUBILEE HOSPITAL, Earl's court, S.W.—Resident House Physician for six months. Salary at rate of £52 per annum, with board and lodging.

ROYAL HOSPITAL FOR DISEASES OF THE CHEST, City-road, E.C.—Assistant Physician.

ST. ANN'S DISPENSARY, 217, St. Ann's-road, Tottenham, N.—Visiting Medical Officer. Salary by results, £50 per annum guaranteed.

ST. PANCRAS AND NORTHERN DISPENSARY, 126, Euston-road.—Honorary Physician.

SAMARITAN FREE HOSPITAL FOR WOMEN, Marylebone-road, N.W.—Anæsthetist. Honorarium £20 per annum.

SOUTH UIST (SOUTHERN DIVISION).—Medical Officer. Salary £77 10s.

SWANSEA GENERAL AND EYE HOSPITAL.—Assistant House Surgeon. Salary £50 per annum, with board, apartments, washing, and attendance.

VENTNOR, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION.—Senior Resident Medical Officer, unmarried.

WANDSWORTH UNION INFIRMARY, St. John's-hill, near Clapham Junction.—Junior Assistant Medical Officer, unmarried, for six months. Salary at rate of £100 a year, with board, lodging, and washing.

WESTERN GENERAL DISPENSARY, Marylebone-road, N.W.—Junior House Surgeon. Salary at rate of £60 per annum, with board, residence, and washing.

WOKINGHAM, BERKS, LONDON OPEN-AIR SANATORIUM, Pinewood.—Assistant Resident Medical Officer. Salary £100 per annum and all found.

Births, Marriages, and Deaths.

BIRTHS.

EDGE.—On June 17th, at Darlington-street, Wolverhampton, the wife of Frederick Edge, M.D., F.R.C.S., M.R.C.P., of a daughter.

GREENE.—On June 9th, at Theatre-street, Norwich, the wife of Arthur Greene, M.A., M.D., of a son.

HATRICK.—On June 13th, at Welland House, New Barnet, the wife of Charles D. Hatrick, M.D., of a son.

HEY.—On June 15th, at Princess-terrace, Ripon, the wife of Samuel Hey, M.R.C.S., of a son.

HORNE.—On June 17th, at Nottingham-place, W., the wife of Maynard Horne, M.A., M.B., B.C. Cantab., of a daughter.

LANGDON-DOWN.—On June 18th, at Dixland, Hampton Wick, the wife of Percival L. Langdon-Down, M.B., of a son.

RAYNER.—On June 15th, at Brailsford House, Derbyshire, the wife of Percy Chambers Rayner, M.B., of a son.

MARRIAGES

GARDNER—CHAPMAN.—On June 10th, at St. Saviour's, Chelsea, by the Rev. Launcelot Charles Walford, M.A., vicar, William Thomas Gardner, M.B. Lond., of Bournemouth, to Adela Gabrielle, youngest daughter of the late David Ward Chapman.

GERRISH—BETTY.—On June 15th, at the parish church, Saint George, Bristol, Daniel Smith Gerrish, M.R.C.S., L.R.C.P., of Saint George, to Lucy May, third daughter of S. Betty, of Saint George.

HOOPER—WOOTTON.—On June 15th, at St. Mildred's Church, Lee, Lionel Swainton Hooper, M.R.C.S., to Ada Edith, elder daughter of Thomas Wootton, of Rotherfield, Burnt Ash-hill, Lee.

DEATHS.

CHARLTON.—At Feilding, North, New Zealand, on the 20th ult., Clifton Charlton, M.B., C.M. Edin., son of Richard Charlton, Claremont-place, Newcastle-on-Tyne.

GRIFFITHS.—On June 15th, at Cae Dre House, Bridgend, South Wales (suddenly), Arthur David Griffiths, M.D., M.R.C.S., L.R.C.P. Lond., aged 34.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Notes, Short Comments, and Answers to Correspondents.

THE PLAINT OF THE DYSPEPTIC.

A CORRESPONDENT has sent us the following verses, addressed to the medical profession, of which he is himself a member, and complaining bitterly of the way in which he is treated by a nymph whom in the opening stanzas he describes as

> A contrairy
> Fickle Fairy,
> Known to the world as Little Mary.

We do not know how he can reconcile it to his artistic conscience as a member of a learned profession to have committed the terminal rhyme, but he sins in good company, for Byron and the author of the Ingoldsby Legends have perpetrated similar atrocities:—

> Ah! in those happy days of yore
> Of unrestricted meals galore,
> I could without disturbing slumber
> Have simply feasted on cucumber!
> Nor passed the course
> With lobster sauce
> For fear of subsequent remorse!
> But now—it is not hid from me
> She even grumbles at my Tea!
>
> And worse! for this is past all joking,
> She threatens to prohibit smoking!
> Though I have struggled to explain
> It does not enter her domain;
> So now I sigh
> For days gone by,
> And swell the universal cry:—
> "Can none of you concoct me some muck
> To pacify my wretched stomach."

WHAT BECOMES OF BOYS WHO OUTGROW THEIR WORK?

To the Editors of THE LANCET.

SIRS,—Can any of your readers inform me whether there has been any inquiry showing what becomes of messenger boys, boys employed in the newspaper trade, and such like employments when past the age for such work. If, as seems probable, the majority swell the ranks of the unemployed we have here at least one cause for deterioration of the race which ought to be carefully inquired into.

I am, Sirs, yours faithfully,

June 20th, 1905. ΔΙΚΑΙΟΣ.

TO DEADEN SOUND.

To the Editors of THE LANCET.

SIRS,—I think if your correspondent "J. S. R." were to try some little rubber ear plugs filled with sawdust which were made for me some years ago by Messrs. Lynch and Co., 15, Silver-street, London, E.C., they might help his patient. They are made in several sizes and must fit the meatus. I have prescribed them at various times as a protection against loud sounds, such as firing, and they certainly have a decidedly deadening effect. Probably one, in the exposed ear only, would be necessary during sleep. I am, Sirs, yours faithfully,

June 13th, 1905. E. CRESSWELL BABER.

"HANSEN'S JUNKET TABLETS."

IN our analytical notice last week of this preparation we wrote under the impression that the junket tablets were the product of the Carlsberg laboratory at Copenhagen of which Dr. Emil Chr. Hansen is chief. As a matter of fact they are prepared at the laboratory of Mr. Chr. Hansen, who is a distinguished chemist and well known in connexion with practical investigations on dairy products, milk ferments, and the production, in particular, of an effective rennet which was the subject of our satisfactory analysis.

"THE SAFE SURGICAL SPONGE."

THIS article is the invention of Mrs. George of Oxford, a nurse. The "sponges" are made of highly absorbent cotton stained with methylene purple and hand-knitted so as to present a reticulated surface, thus insuring the greatest possible amount of absorption, whilst from the nature of the material perfect sterilisation is possible. The sponges may be used over and over again with due regard to asepsis, thus rendering them economical, a point that cannot be overlooked since aseptic surgery has so much increased the cost of the toilet of operations. The sponges, though generally useful for all operations of surgery, will be found especially so in abdominal operations, their distinctive colour and appearance rendering it a practical impossibility for them to be overlooked in the body. Whereas other sponges may become stained to the colour of the blood itself and thus only with difficulty be distinguishable, it is a peculiar characteristic of the dye in this case that it turns to a deeper purple when saturated with blood and always stands out in clear contrast to the tissues. The sponges are manufactured by Messrs. Down Brothers, Limited, 21, St. Thomas's-street, London, S.E.

OLD BOOKS.

To the Editors of THE LANCET.

SIRS,—Is anyone likely to buy an old book, date 1633, printed by John Legatt for John Partridge, London, entitled "The Strange and Dangerous Voyage of Capt. Thomas James"? I want to sell it for a patient (a widow) who is very badly off.

I am, Sirs, yours faithfully,

June 20th, 1905. P. B.

To the Editors of THE LANCET.

SIRS,—Can any of your readers inform me how it is possible to get rid of old medical and other books in order to find room for new editions? One would gladly benefit some medical charity in this way from time to time, however small the sum realised.

I am, Sirs, yours faithfully,

June 17th, 1905. R. D.

Vae Victis.—There is no customary method, and trouble has before now arisen because of this absence of precedent. It is very hard upon the principal to find himself under engagement to an assistant who cannot discharge his duties; it is very hard on an assistant to be discharged upon the briefest possible notice because he is ill. If possible an arrangement should be come to by which all the hardship does not fall upon one of the parties. In our opinion the possibility of a breakdown in health on the part of the assistant, when engaged for a prolonged term, ought to be taken into consideration in the agreement.

Belgaum.—We are perfectly certain that the experiments said to have taken place in Paris are pure invention. No such experiments could be performed in Great Britain and if they were performed they would prove nothing. The antivivisection party deals considerably with quotation from speeches by medical men "delivered quite recently," but it will be observed that trifles like initials and dates are usually omitted.

Layman.—The subject is one upon which we should have no objection to publishing the views of persons not in the medical profession, but our correspondent is entirely at sea. The toxins upon which he depends for his explanation have no existence.

J. G. C.—From what our correspondent tells us we think that the addition of the basement would be most desirable.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (26th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Royal Free (2 P.M.), Guy's (1.30 P.M.).

TUESDAY (27th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (1 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Royal Ear (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Soho-square (2 P.M.), Chelsea (2 P.M.), Central London Throat and Ear (2 P.M.).

WEDNESDAY (28th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.) Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. George's (Ophthalmic, 1 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.), Westminster (2 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), Cancer (2 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Ear (2 P.M.), Royal Orthopædic (3 P.M.).

THURSDAY (29th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Gt. Northern Central (Gynæcological, 2.30 P.M.), Metropolitan (2.30 P.M.), London Throat (9.30 A.M.), St. Mark's (2 P.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.), Royal Orthopædic (9 A.M.).

FRIDAY (30th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing Cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), Ophthalmic (10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.), Gt. Northern Central (2.30 P.M.), West London (2.30 P.M.), London Throat (9.30 A.M.), Samaritan (9.30 A.M. and 2.30 P.M.), Throat, Golden-square (9.30 A.M.), City Orthopædic (2.30 P.M.), Soho-square (2 P.M.), Central London Throat and Ear (2 P.M.), Royal Ear (10 A.M.).

SATURDAY (1st).—Royal Free (9 A.M.), London (2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), University College (9.15 A.M.), Charing Cross (2 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Throat, Golden-square (9.30 A.M.), Guy's (1.30 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (26th).—ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (20, Hanover-square, W.).—7 P.M. Council. 8 P.M. Annual General Meeting. Election of President and Officers for the next Session. Exhibition and Presentation of a Series of Models by Mr. D. Hepburn. Paper:—Mr. W. A. Maggs: Antiseptic Alveolar Plugs for the After-treatment of Extractions. Followed by a Discussion in which Mr. Bland-Sutton and Dr. G. W. H. Eyre will take part. The President: Valedictory Address.

TUESDAY (27th).—ROYAL STATISTICAL SOCIETY (9, Adelphi-terrace, Strand, W.C.).—5 P.M. Paper:—Mr. S. Rosenbaum: A Contribution to the Study of the Vital and other Statistics of the Jews in the United Kingdom.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (26th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. R. G. Little: Clinique. (Skin.) 5.15 P.M. Dr. F. J. Smith: Jaundice, its Meaning.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Paget: Surgical Cases.

TUESDAY (27th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Dr. L. Williams: Clinique. (Medical.) 5.15 P.M. Mr. L. Mummery: The Surgical Aspects of Colitis.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Dunn: Ametropia.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture:—Dr. A. E. Giles: Puerperal Temperatures.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. J. Taylor: Intracranial Tumours.

WEDNESDAY (28th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. C. Ryall: Clinique. (Surgical.) 5.15 P.M. Mr. S. Stephenson: Ocular Therapeutics.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Dr. Beddard: Practical Medicine.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (Brompton).—4 P.M. Lecture:—Dr. H. Mackenzie: Mitral Stenosis.

THURSDAY (29th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. Hutchinson: Clinique. (Surgical.) 5.15 P.M. Mr. T. Walker: Hæmaturia.

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Baldwin: Practical Surgery.

HOSPITAL FOR SICK CHILDREN (Gt. Ormond-street, W.C.).—4 P.M. Lecture:—Mr. Steward: Retro-pharyngeal Abscess.

SAMARITAN FREE HOSPITAL FOR WOMEN (Marylebone-road, N.W.).—3 P.M. Lecture:—Dr. McCann: The Treatment of Inoperable Uterine Cancer.

MOUNT VERNON HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST (7, Pitzroy-square, W.).—5 P.M. Lecture:—Dr. F. W. Price: Aortic Stenosis. (Post-Graduate Course.)

ROYAL INSTITUTE OF PUBLIC HEALTH.—5 P.M. Prof. S. Delepine: Anthrax in Great Britain.

NORTH-EAST LONDON POST-GRADUATE COLLEGE (Tottenham Hospital, N.).—4.30 P.M. Lecture:—Dr. A. J. Whiting: Affections of Peripheral Nerves.

FRIDAY (30th).—MEDICAL GRADUATES' COLLEGE AND POLYCLINIC (22, Chenies-street, W.C.).—4 P.M. Mr. E. Clarke: Clinique. (Eye.)

POST-GRADUATE COLLEGE (West London Hospital, Hammersmith-road, W.).—5 P.M. Mr. Lloyd: Anæsthetics.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Queen-square, Bloomsbury, W.C.).—3.30 P.M. Dr. J. Taylor: Unusual Cases of Paralysis.

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, AND WHEN ACCOMPANIED BY BLOCKS IT IS REQUESTED THAT THE NAME OF THE AUTHOR, AND IF POSSIBLE OF THE ARTICLE, SHOULD BE WRITTEN ON THE BLOCKS TO FACILITATE IDENTIFICATION.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

MANAGER'S NOTICES.

THE INDEX TO THE LANCET.

THE Index and Title-page to Vol. I. of 1905, which is completed with the issue of to-day, will be given in the next number of THE LANCET.

VOLUMES AND CASES.

VOLUMES for the first half of the year 1905 will be ready shortly. Bound in cloth, gilt lettered, price 18*s.*, carriage extra.

Cases for binding the half-year's numbers are now ready. Cloth, gilt lettered, price 2*s.*, by post 2*s.* 3*d.*

To be obtained on application to the Manager, accompanied by remittance.

TO SUBSCRIBERS.

WILL Subscribers please note that only those subscriptions which are sent direct to the Proprietors of THE LANCET at their Offices, 423, Strand, W.C., are dealt with by them? Subscriptions paid to London or to local newsagents (with none of whom have the Proprietors any connexion whatever) do not reach THE LANCET Offices, and consequently inquiries concerning missing copies, &c., should be sent to the Agent to whom the subscription is paid, and *not* to THE LANCET Offices.

Subscribers, by sending their subscriptions direct to THE LANCET Offices, will ensure regularity in the despatch of their Journals and an earlier delivery than the majority of Agents are able to effect.

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Subscriptions (which may commence at any time) are payable in advance. Cheques and Post Office Orders (crossed "London and Westminster Bank, Westminster Branch") should be made payable to the Manager, MR. CHARLES GOOD, THE LANCET Offices, 423, Strand, London, W.C.

SUBSCRIBERS ABROAD ARE PARTICULARLY REQUESTED TO NOTICE THE RATES OF SUBSCRIPTIONS GIVEN ABOVE. It has come to the knowledge of the Manager that in some cases higher rates are being charged, on the plea that the heavy weight of THE LANCET necessitates additional postage above the ordinary rate allowed for in the terms of subscriptions. Any demand for increased rates, on this or on any other ground, should be resisted. The Proprietors of THE LANCET have for many years paid, and continue to pay, the whole of the heavy cost of postage on overweight foreign issues; and Agents are authorised to collect, and do so collect, from the Proprietors the cost of such extra postage.

The Manager will be pleased to forward copies direct from the Offices to places abroad at the above rates, whatever be the weight of any of the copies so supplied. Address—THE MANAGER, THE LANCET OFFICES, 423, STRAND, LONDON, ENGLAND.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, June 22nd, 1905.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind	Rain-fall.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks at 8.30 A.M.
June 16	29·79	S.	0·13	130	75	58	62	67	Fine
,, 17	29 73	N.E.	0·53	88	69	60	60	61	Raining
,, 18	29 69	S.W.	0·10	119	67	56	56	60	Cloudy
,, 19	29 85	S.W.	...	131	70	54	57	62	Cloudy
,, 20	30 07	S.W.	...	96	70	51	58	63	Cloudy
,, 21	30·19	S.W.	...	124	73	58	60	66	Cloudy
,, 22	30 34	N.	...	122	76	57	60	66	Hazy

During the week marked copies of the following newspapers have been received:—*Manchester City News, The Citizen (West of England), Devon and Exeter Gazette, Westminster Gazette, Globe, Evening News, Broad Arrow, Reading Mercury, Liverpool Post and Mercury, Herefordshire Mercury, Morning Leader, Freeman's Journal, Mining Journal, National Service Journal, Local Government Chronicle, Referee, Daily News, Standard, Liverpool Courier, &c.*

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